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LANDING AND MARKETING FACILITIES AT SELECTED SEA FISHING PORTS

Preliminary Draft

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
ROME, 1963

FAO FISHERIES REPORTS

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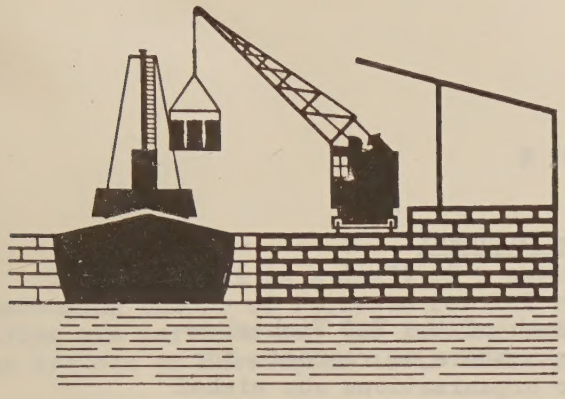

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Preliminary Draft

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Preparation of this Document

For some years, the Economics Branch of the FAO Fisheries Division has been receiving increasing numbers of requests for information from governments and other organizations who wished to establish centralized facilities and services for landing and marketing fish. The present document on the subject is a preliminary draft that has been prepared for the use of FAO officials and for circulation to experts in the subject matter who are invited to comment and suggest improvements. In the light of the comments received on this provisional version, a decision will be taken on the desirability of issuing the manuscript as a FAO publication in English, French and Spanish. The suggestions made by readers of the present version will be fully taken into account in preparing the definitive text of a formal publication.

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F O R E W O R D

This document is a draft of a publication which is designed to meet an ever-increasing number of requests for information on the organization of central facilities and services for the landing and sale of fish, especially from countries in the process of developing their fishery industries.

While it is therefore primarily intended to serve as a source of information for those engaged in the planning, development and administration of such facilities and services in developing countries, it is, nevertheless, hoped that it may also be useful to fishery administrators in more advanced fishing countries as a convenient reference to the various types of layout and of port and market installations which have been developed at different fisheries centers to meet the requirements of particular fishery industries.

For this purpose, 21 wholesale fish markets and port terminals were selected from different parts of the world and described individually, according to a homogeneous pattern, to facilitate comparisons. Each individual description is preceded by a short summary, to allow easy identification of the main characteristics.

An attempt has been made in the Introduction to review some of the more basic problems and considerations generally governing the establishment, organization and administration of wholesale fish markets and port terminals.

While it has not been possible to include and analyze the background and significance of all these various factors in such a review, it is, however, hoped that it may serve to assist fishery administrators in developing countries to recognize and identify their own particular problems and requirements, for which they may find possible solutions or useful ideas in the descriptions dealing with the individual ports and markets which were established or are operating under comparable conditions.

As is pointed out in the Introduction, it is not intended to suggest that any particular combination of facilities in one locality will provide a model for the construction of such facilities in another. In particular, it has to be recognized that some ports and markets were constructed to meet the requirements of industries which have changed considerably since the facilities were originally planned.

The information and illustrations which provided the basis for the present draft were assembled on FAO's behalf by various government fishery authorities, or consultants designated by them, and FAO gratefully acknowledges their most helpful co-operation. Special thanks are also due to the two FAO consultants, Dr. Heinz Kaufmann, Director of Fisheries, Hamburg, who was responsible for the preparation of the text, and Mr. Bertil W. Johnson, Fishery Harbor Engineer of the Royal Board of Shipping and Navigation in Sweden, who prepared the drawings.

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TABLE OF CONTENTS

	Page
Foreword	-
Introduction	1
Bangkok, Thailand	18
Boston, U.S.A.	29
Boulogne-sur-Mer, France	41
Bremerhaven, Federal Republic of Germany	55
Brownsville, U.S.A.	70
Chikura, Japan	77
Esbjerg, Denmark	94
Gdynia, Polish People's Republic	112
Gothenburg, Sweden	123
Great Grimsby on Humber, United Kingdom	136
Havana, Cuba	156
Hirtshals, Denmark	163
Hong Kong	178
IJmuiden, Netherlands	188
Karachi, Pakistan	197
Kiel, Federal Republic of Germany	211
Ostend, Belgium	222
Takoradi, Ghana	234
Tokyo, Japan	241
Valletta, Malta	252
Vancouver, Canada	259
Bibliography	275

LANDING AND MARKETING FACILITIES AT SELECTED SEA FISHING PORTS

INTRODUCTION

Centralization of facilities is an important feature in the development of small-scale fishery industries to higher levels of production and trade. Such centralization permits economical provision of essential services such as berthing, handling of fish, supplying fishing requisites and maintenance and repair of fishing boats. Central facilities also help to achieve greater efficiency in handling, selling, processing and distributing fish in bulk. This may involve provision of harbor facilities to accommodate mechanized fishing vessels either of larger size or in greater number than can be handled in small coastal centers. It may also involve the provision of wholesale fish markets where supplies from a large number of fishing boats and small landing centers can be collected, processed, sold and distributed for retail sale.

Many Governments wish to provide such facilities and this need is growing with the steady improvement of fishing vessels, landing of larger catches, requirements for more accommodation and servicing facilities and with a gradual extension of marketing activities. Among these Governments there is particular interest in obtaining information on the layout facilities, equipment, administrative arrangements and operations of efficient port terminals and wholesale fish markets in order that they can best plan their installations to suit their own particular requirements.

Among the countries where such installations have been used for many years, there is also much interest in such information. This interest has arisen with new developments in the industry such as the expansion of certain forms of processing, for example deep-freezing, canning and reduction, improvements in transport, changes in the size and operations of fishing vessels, the exploitation of new fishing grounds or fish stocks and changes in the pattern of trade.

The purpose of this publication, therefore, is to meet the requirements of both developed and developing countries. It will be seen from the chapters dealing with the individual wholesale markets and port terminals, and it should be emphasized, that facilities, organization and administrative arrangements vary considerably in the different port terminals and wholesale fish markets. It is neither possible nor pertinent to draw any definite conclusions from the various aspects of facilities, organization and administration. Efforts have been made to present as many features and considerations as possible which might be taken into account when contemplating construction of such wholesale fish markets and port terminals. Planning and construction of any wholesale fish market or port terminal must be based on its own special requirements.

SELECTION OF LOCATION

When considering establishing wholesale fish markets and port terminals, there are a number of aspects which need careful consideration. First is determination of the location. The general location would have to be decided from the viewpoint of the entire country; then, a more precise site would have to be chosen with respect to the city, town or area selected. In both cases, consideration should be given to economic as well as geographical and physical aspects. The final decision must necessarily be based on a number of geographical, physical and economic considerations. Political considerations may also come into it, but these are outside the scope of the present study.

Geographical and Physical Factors

The geographical and physical factors to be considered should include adequate shelter, water depth, availability of space, tide and wind direction, silting and others. Favorable natural factors might greatly facilitate construction and save expenses. Direction and wind force will have to be considered, particularly when sail-boats will also use the port and market. Silting and sand barriers which might be formed by sea current, although often not realized at first sight, might make the construction of a fishing port economically impracticable. This was the case in some countries in west Africa. These physical factors need examination by specialists in harbor construction.

In the rather general information on the locations of the port terminals included here, it will not be possible to find details of the geographical and physical aspects of these ports. The reader will see that a number of wholesale fish markets and port terminals have been sited on rivers or canals, at river mouths or inlets (e.g. Bangkok, Gdynia, Gothenburg, IJmuiden, Tokyo, Bremerhaven, Kiel and Vancouver). This may suggest that such physical factors provide appropriate shelter, as well as convenient water transportation. It might also be pointed out that when techniques in harbor construction progress, some of the physical considerations might become less important. At the same time, the development of the fishing industry will call for different requirements. For instance, the development of larger boats may require a greater depth of water which was not necessary when the port was constructed.

Economic Factors

There are several considerations which might be called economic, although these are often closely connected with geographical factors. These may include fishing areas, types and number of boats, volume of landings, marketing areas and availability of land.

Fishing Areas: Convenience for fishing boats, fishing in waters near the port, is an obvious need. Such convenience would mean more time spent in fishing and less deterioration in fish quality. This is even more evident for smaller fishing boats. However, as a result of the recent development of distant-water fishing fleets and technological improvements, this aspect is becoming less significant. This will be obvious, for instance, in the case of large trawlers operating from Grimsby or Bremerhaven in waters 2,000 or more miles away, and for tuna liners from Tokyo, equipped with quick-freezing apparatus, operating in the

South Pacific or Indian Oceans. The recent development of factory ships should also be mentioned in this connection. The port of Grimsby, for example, on England's east coast, was first developed for the boats mainly operating in the adjacent North Sea. But, with the development of a fleet which fished farther and farther into the Atlantic Ocean, the particular significance of its location has been lost. As boats become larger and increase their operational radius, they may be able to ignore their home ports in favor of ports which are more convenient for their landings and at which they may obtain better prices for their catches. Oceanographic changes might change the location of the fishing grounds; larger boats may be able to follow the seasonal migration of fish further. It is reported that boats based at Chikura fishing port in Japan land three times the quantity of fish at other ports than at Chikura. It is not known whether this fact was foreseen when the port and market were constructed and to what extent this has affected the operation of the market. But this example shows the value of considering types and number of boats to be served, and volume of landings and fishing areas, not only with respect to the present, but also with an eye to possible future developments.

In this connection, it may be interesting to examine efforts to extend fishing time through the use of carrier vessels to bring in fish from the catcher-boats, and through the use of supply boats which take fuel and provisions to fleets. Carrier vessels are used in Bangkok, where the market is 30km up a river, and in Vancouver. Supply boats are used in Brownsville.

Constructing a fishing port in conjunction with an existing commercial port may have both advantages and disadvantages. The fishing port might benefit from the facilities common to both such as waterways, breakwaters, transport, boat repairs and outfitting facilities. But if sufficient space is not available, fishing boat traffic might be delayed by commercial traffic, and further expansion of the fishing port may be limited. The matter would need careful consideration according to individual local conditions.

Marketing Areas: Reports from the 21 wholesale fish markets included in this publication present a variety of distribution methods after landing. Distribution is affected by whether the fish is distributed fresh for human consumption or processed. Recent developments in the fish freezing and filleting industry and a gradual change in consumers' taste, appear to change and facilitate distribution of frozen fish, particularly in the countries with developed fisheries and a transport network. However, the availability of immediate and nearby marketing areas, with good transport facilities, may always be an advantage. In Tokyo, Hong Kong and Bangkok, fish landed at the wholesale fish markets is sold almost entirely in the immediate urban area by retailers well distributed throughout the cities. Chikura is an example of a landing port which has a nearby consumption center, Tokyo, about two hours away. For the majority of the wholesale markets studied, a large part of the landings are destined either as fresh or processed fish, to intermediate and distant markets, as well as to the immediate vicinity. The markets often cover the whole country and, in many cases, include export markets. Landings at Boston, Bremerhaven, Gdynia and Grimsby are shipped, fresh or frozen, all over their respective countries. Landings at Boulogne-sur-Mer, Gothenburg, IJmuiden, Ostend and Vancouver, are distributed, not only in their own countries, but also are shipped to foreign markets. The major part of

the landings at Esbjerg and Hirtshals is exported. The area of distribution may vary and develop depending on the size of the catch, availability of an immediate consumption center and development of processing and transport facilities. However, it would always be worthwhile considering at the outset the possible marketing areas and the magnitude of the demand to be served by the wholesale fish market when construction of such a market is contemplated.

Distribution cannot be considered without taking available transport facilities into account. The Grimsby fishing port terminal and market has developed with the opening of railways and building of commercial and fishing docks by a railway company. Development of the Port of Vancouver started with the opening of the transcontinental rail link, the Canadian Pacific Railway.

Grimsby and Tokyo may provide examples of extreme development of a fishing port and wholesale fish market with a highly developed distribution network. Enormous quantities of fish are brought (annual landings: Grimsby, over 200,000 metric tons, Tokyo, 540,000 metric tons) not only directly by fishing boats, but by land transport from other landing ports for further shipment throughout the country. In these cases, the wholesale market is the meeting place for huge factors of demand and supply, and price is determined daily, or even hourly. The prices in other wholesale markets in those countries are greatly influenced by the prices determined in the Grimsby and Tokyo markets.

Esbjerg is a port terminal where well developed processing facilities, including those for filleting, canning, curring and fishmeal, annually attract over 200,000 tons of direct landings plus considerable land shipments for further distribution, primarily for foreign markets. There may be a considerable external economy in such places with respect to disposition of fish, outfitting boats, processing and distribution.

Availability of Land: The problem of availability of land may be physical as well as economic. It may not be sufficient for construction plans to take into account the number of fishing boats and the number and volume of landings expected when construction is completed. Future development of the fishing industry in general and the stimulus which such new ports and wholesale fish markets might have on the number of boats and fish catch might also be taken into account. Experience shows that in many circumstances over the course of years the space and facilities become insufficient to accommodate the increasing demand, resulting in congestion and inefficient operations. This may be particularly so when the expansion of land facilities such as ice plants, cold storage, various processing plants, service stations for fishing boats and other amenities are required to meet the need of a developing industry and to increase the efficiency of the port and market. This may be noted in the cases of Tokyo, Grimsby and Hong Kong, where lack of space has been encountered in expanding their facilities. Therefore, wherever possible, liberal allowance should be made for future expansion in the area. The construction of various facilities might be carried out in stages according to the need. From the information assembled, there is not sufficient data available on this aspect of individual wholesale fish markets and ports, but in the case of Karachi, a fairly large area was allocated at the outset, i.e. 76 acres. At present, 45 acres are utilized. The remaining area is reserved for future expansion, particularly by various private processing industries. In the artificial harbor at Hirtshals, ample space has also been reserved for expansion.

DETERMINATION OF TYPE AND SIZE OF FACILITIES

When the place for the wholesale fish market and port terminal is selected, the next consideration is the type and size of facilities required. There are several factors which might be taken into account in this connection.

Types and Number of Vessels and Number of Landings Expected

The necessary landing capacity and types of equipment will differ, depending on whether the market is served by sailboats, mechanized boats, small or large boats, and depending on how many landings are expected annually, seasonally and daily. Seasonal fluctuations of the number and volume of landings may be a difficult factor to deal with. The consideration should cover not only present requirements but also possible future development, as mentioned earlier. Examination of these factors helps to determine types and size of port and land facilities such as quays, selling and dispatch halls, ice plants, cold stores, various processing plants, fueling and other outfitting stations, repair shops, railway sidings, and other facilities.

Land Arrivals

It is not unusual for a wholesale market, once established, to attract freshwater fish and fish transported overland, since the wholesale market, with its various auxiliary facilities, provides the most convenient place to sell fish by reasonable methods and is the best place for producers to secure fair prices. The volume of overland shipments, therefore, will also affect the type and size of market facilities. In Bangkok, 80 percent of the total market volume arrives by land. This includes freshwater fish and shipments from other coastal landing places. In Tokyo, where the average daily turnover is about 1,600 tons, only 14 percent of the total is brought by boats and the rest by rail (56 percent) and road (30 percent). In Karachi, as well, a fair amount is brought by land from nearby villages where many non-mechanized boats operate.

Species of Fish and Disposition

The mode of disposition may depend on the species of fish as well as on consumers' taste which may favor certain types of processed products. In Brownsville, United States, the port and wholesale fish market is intended entirely for shrimp boats. Seventy percent of the shrimp catch is deveined, peeled, breaded, quick-frozen, or otherwise processed; 30 percent is packed in the headless green state. The facilities and services are designed exclusively for handling and processing shrimp. In Boston, the landings are all intended for human consumption; 60 percent as fresh and 40 percent as frozen fillets. Cold storage, processing and packing facilities are provided on the fish pier accordingly. In Bangkok, a fish boiling plant operates on the market premises to meet the demand in inland areas for boiled mackerel. In Chikura, there are as many as 31 processing plants in the market area for boiling, drying and salting mackerel, which comprises 90 percent of the total landings. The Vancouver port area, which ships processed products throughout Canada, the United States, Europe and elsewhere, has developed processing plants for salmon canning, halibut filleting and freezing, and for other species and processes. It could be said that the types of facilities depend on what species of fish are delivered to the market and what types of products are shipped from it.

Sales Methods and Users

Auction is the general practice at wholesale fish markets. The size of auction halls depends on the volume of landings and the number of expected auction participants. Some exceptional cases can be seen in the sections dealing with individual wholesale fish markets. In Gdynia, Poland and Havana, Cuba, where fish is bought at a fixed price by a state corporation or controlled buyers, auction halls are obviously not required. Discharging and handling facilities such as for sorting, weighing and transporting are sufficient. In Boston, auction is carried out, but without any previous inspection by buyers. In such a case, there is no need to bring fish into the auction halls and much space and time can be saved. It appears this is also the case at the Vancouver Fish Exchange with respect to halibut. Where fishing boats are so-called "controlled boats", which means boats with special financial connections with specific processor/buyers, and fish is delivered to them, no auction is organized. This is the case in Brownsville.

In Tokyo, fish is auctioned by seven consignees to about 1,500 wholesalers with shops on the market premises. These wholesalers sell fish in smaller quantities, at a negotiated price, to about 20,000 retailers who purchase fish for their retail shops distributed throughout the city. This transaction, carried out in two stages within the market, is practised to enable quick disposal of approximately 1,600 tons of fish brought in daily. Much more space and many more buildings than the auction halls are therefore provided not only for the wholesalers' premises but also for retailers to store their purchased goods until dispatch.

LAYOUT AND FACILITIES

Various considerations were mentioned earlier with respect to types of facilities required at the wholesale fish markets and port terminals.

Layout of various facilities will have a great bearing on the efficiency of operation. In most cases, fish is landed at the quay, sorted and weighed (often in the places particularly reserved for the purpose) and then carried to the auction hall. After auction, the fish is taken over and packed by wholesalers, processors, retailers, or others, and sent to various destinations. These may be retailers' shops, cold stores, processing plants, and often to other towns by rail or road for further sale. In many cases, cold stores and processing plants are located within the wholesale fish markets. For internal transport (for instance, from the landing quay to the auction hall) many different types of transport, manual or mechanized, are used. As can be seen in the following sections dealing with individual wholesale fish markets, facilities and their layout vary from market to market. The consideration may, however, be that the layout of various facilities should be planned in such a way that the fish flows smoothly from landing to dispatch, within a minimum time and without congestion. It could be said, for instance, that it would be advantageous for the auction hall to be as near the landing quay as possible but still allowing space for discharge, internal transport, sorting and weighing and other operations. Ideal layout is unlikely, since available space is often limited and the land formation may not allow for the most convenient arrangement. In such cases, adaptation is necessary.

It might be useful to mention various facilities of the wholesale fish markets and port terminals in this publication and point out any salient aspects of their operation.

Landing Quays

In Boston, the port and market have been built in the form of a pier. Buildings on the pier include an administration building with auction hall, processing and packing plants, ice and cold storage plants and others. In Brownsville, the port and market is a basin with piers in the center and processing and supply facilities around the basin.

Unloading

Unloading may be carried out by simply using manual labor and containers, as in Bangkok, or with the use of some mechanical equipment. This equipment includes pulleys, winches (some mobile), conveyor belts, electric or hand-operated cranes, roller trucks and electric hoists.

Sorting and Weighing Facilities

Sorting and weighing before auction is the usual practice. For this purpose, as in Bangkok, Karachi and Hong Kong, sorting sheds or sorting tables are provided next to auction halls or in part of them. In most cases, sorting into species and sizes and weighing is carried out by market hall workers and sometimes by the Boat Owners' Association (IJmuiden). Labels are attached, showing the name of the owner, weight, and other details, as is the case in Gothenburg.

Auction Hall

Separate auction halls are often provided when several different types of fish are auctioned. In Bangkok, there are three separate auction halls for sea fish, salted/dried fish and live freshwater fish. In Karachi and Hong Kong, two separate auction halls are provided for fresh and dried fish. This would be a convenient arrangement, since in most cases, the particular wholesalers or dealers specialize in certain types of fish, and since the hours of arrival and sales of the commodity are usually different. Sufficient space should be provided for laying out fish for inspection by buyers.

Merchants' Premises

These may include offices for merchants and facilities used by buyers, such as packing places or compartments (Gothenburg), filleting places (Grimsby), storehouses (Hirtshals, Esbjerg). Requirements will vary from market to market, according to the types of merchants, types of fish and mode of dispatch from the markets. Special requirements in the Tokyo Wholesale Fish Market, arising from its specific organization of sales, have already been mentioned. Merchants' premises, particularly offices, are often located above the ground floor of market buildings, and the advisability of constructing two-storied buildings should be considered.

Ice Plants and Cold Storage Facilities

Necessary capacity will vary according to the volume of landings and mode of disposition of fish. Usually these facilities are provided on the market premises. Often the facilities in the city area are used supplementarily. The facilities are run, in most cases, by private industries and sometimes by market authorities. In some markets, both operate side by side. In Boston, ice plants are maintained by the Market Corporation; in Bangkok, ice plants and cold storage facilities are provided by a Government Corporation; in Karachi, these facilities are owned by the Government and operation is entrusted to a fishermen's co-operative; in Gdynia, ice plants and cold storage are state-owned and operated; in Chikura, they are owned and operated by a fishermen's co-operative.

Processing Facilities

There are a number of different processing facilities operating in conjunction with the wholesale fish markets and port terminals, while in some markets, considerable quantities of already processed fish, particularly dried or salted, are brought for auction and further distribution (Bangkok, Karachi, Hong Kong). Processing facilities may be situated at the market premises or in the immediate vicinity of the market. The processing facilities are, for instance, boiling plants (Bangkok, Chikura), herring salting sheds (Bremerhaven, Kiel), filleting plants (Boston, Hirtshals, Esbjerg), fish meal plants (Bremerhaven, Boulogne-sur-Mer, Gdynia. Gothenburg, Grimsby, Havana, IJmuiden, Ostend, Hirtshals, Esbjerg), smoking plants (IJmuiden) and canning plants (IJmuiden, Hirtshals, Esbjerg). Facilities vary according to the development of the fish processing industry in connection with the possibility of marketing certain types of products. In Karachi, as already seen, considerable areas of the market are reserved for future development of processing industries such as freezing, canning, fish oil and fish meal manufacture. In most cases, the processing facilities are owned and operated by private firms.

Transport

Internal: Transport within the markets varies. Transport may be manual or may be assisted by trolleys, hand-carts or barrows, small electric trucks, fork-lift trucks, conveyor belts, or other mechanical means. As a rule, transport is more mechanized in the wholesale fish markets and port terminals where processing plants are highly developed. In many cases, different kinds of transport means are employed in the same market to meet various requirements. Internal transport is dealt with, in the majority of cases, by market authorities who provide equipment and labor.

External: Dispatch of fish or fish products from wholesale fish markets is usually made by rail, by road and sometimes by boat. The availability of external transport facilities largely depends on the general stage of development of communcations and transport facilities in the respective countries. In many markets, railway sidings and depôts are provided, either by the market authorities or private concerns, to take the fish to the nearest stations. Grimsby's highly developed railway transport facilities enable coastal wholesalers to develop direct trade with retailers. Eight special daily fish trains with insulated wagons serve 4,000 destinations in 24 hours. There is an arrangement for bulk shipment between the Fish Merchants' Association and the Railway Authority. Simple code numbers are used by individual buyers for different destinations so that the Association may deal quickly with the bulk of shipment for different destinations. Truck transport, often with refrigeration, is also extensively used in most markets. Esbjerg has a regular service with refrigerated trucks.

Usually, the dispatch of fish after auction is the responsibility of the buyers. As an exception, in Hong Kong, the Fish Marketing Organization, which operates the market, also provides truck transport to buyers' locations free of charge.

Containers

A great variety of types and sizes of containers is seen in the different wholesale markets, according to the different purposes and types of fish. These include wooden boxes, canvas baskets, waxed cartons, split bamboo baskets (Bangkok, Hong Kong), mat baskets (Karachi), cane baskets, wire baskets, barrels, plastic boxes (Bremerhaven, Kiel), aluminum boxes (Grimsby) and others.

In some markets, containers of certain types are for specific use on board, while others are used for handling fish in the markets. In Kiel, the Marketing Company keeps as many as 60,000 boxes for the use of cutters and coastal fishing boats at sea. In some cases, the same containers used in the market are also used for further dispatch, but in many cases particular types of containers are used only for transportation within the market and for auction. Arrangements for provision of containers differ according to markets. In many cases, market authorities provide them, together with cleaning services with disinfectant, on a rental basis. Sometimes containers are provided by private firms, or by fishery organizations for purchase by fishermen or buyers. In Bangkok, fish agents provide special containers free of charge for shipment of live fish. Considerations with respect to containers used on the market premises would be facility of display, internal transport and hygiene. With respectto containers used for dispatch from the markets, there is the question of whether they should be returnable or non-returnable. It is often costly and difficult to return empty boxes from their destinations. In Grimsby, non-returnable boxes are gradually replacing returnable ones.

Fuel and Other Supplies and Services

Fuel is supplied by stations usually operated by private firms on the pier or in the port area. Other facilities for supply and service include ship chandlers, gear suppliers, carpenters, blacksmiths and repair shops. In some ports, port authorities provide slipways (Esbjerg, Hirtshals, Chikura, IJmuiden, Grimsby, Valletta).

Water and Power

Water is provided both for cleaning the market premises, fish and fishing boats, for drinking, and use in various plants such as ice, refrigeration plants and processing plants. Sea water is often used for cleaning. Fresh water for drinking and other purposes is normally supplied by the harbor authorities, municipality or water supply companies. It is sometimes necessary for ice plants or large processing plants to bore wells to secure the large amount of water required. In Brownsville, a reservoir has been constructed for additional and emergency water. In Gothenburg, pipelines along the quays supply fresh water to fishing vessels for drinking and cleaning.

Electric power for light and processing plants is usually supplied by local electric companies.

Amenities

Amenities differ from port to port. The most common are rest rooms, shower baths, restaurants, canteens, first aid, clubs and assembly halls for fishermen, clinics and fishermen's hostels. These facilities are provided either by the market authorities for public use, or by private industries, for instance, by processing plants for their employees.

LANDING ARRANGEMENTS

In the Vancouver fishing port terminal, processors situated at the port area work from their plant premises and there is no central buying area. The catch, particularly salmon, is delivered directly to its respective plants and there are no special arrangements for landing.

But in most fishing port terminals some central arrangements are made for orderly landings. Order of landings is often a delicate problem. It has to be dealt with by regulations laid down by the Port and Market Authorities, as the order may affect the prices obtained. This may be the case, particularly after irregular landings as a result of bad weather or where certain week-days are considered "fish days" for religious reasons.

Berthing is directed by port authorities. Landings are made normally in order of arrival of vessels either by the ships' crews or by workers provided by the marketing authorities. Most landings commence early in the morning. Some start at midnight (e.g. at Grimsby, for distant-water trawlers), so that fish may be sorted, weighed, inspected and be ready for auction around 0600 or 0700 hours). In Karachi, trawler landings are made between 1700 and 2200 hours and in Bremerhaven from 2000 hours onwards on the day before auction.

Usually, inspections are made by buyers for purchasing purposes, as well as by Government or Municipal Inspectors for sanitary control. In Bangkok, unloading is carried out according to the progress of the auction. In Boston, where auctions are held without any previous inspection, fish is kept in the hold until the buyer is known as a result of auction.

The responsibility of unloading falls either upon the crew (e.g. Karachi, Hirtshals, Esbjerg) or upon the marketing authorities who provide laborers (e.g. Hong Kong, Bremerhaven, Kiel). In some cases, special companies exist to provide such labor under the direction of boat owners (e.g. IJmuiden). Where unloading services are provided by the market authorities, a fee is usually paid by the boat owners, together with commission for auction and other services. Sorting, weighing and display, which follow unloading, are normally carried out by the market authorities.

ORGANIZATION OF SALES

Methods of Sale

The reason for auction being a general practice could be the necessity of disposing of a large amount of fish - a perishable commodity - in the shortest possible time, for a price which truly reflects the demand and supply situation. There are, however, several exceptional cases. In Vancouver, salmon is sold to canning plants according to predetermined price arrangements. In Brownsville, where almost all shrimp boats are financially controlled by processing plants, the price is determined individually according to prevailing supply and demand. In Takoradi, Ghana, fish is sold either by the fishermen themselves or by market authorities on behalf of the fishermen at negotiated prices. This may be attributable to the limited volume of landings or to some traditional structure of fish marketing. In some markets, part of the sale is carried out, not by auction, but on an individual contract basis. This is so for distant-water cod in Grimsby and processed fish products in Tokyo. In Hong Kong also, sales are negotiated when processors require large quantities of one species. In such cases, time for display will be saved and quality of fish could be better preserved. Although auction is the most prevalent sales method, and appears to suit the characteristics of the commodity, the development of the processing industry and the process of vertical integration in the industry, might gradually change the methods of sale.

There is no buyer inspection before auction in Boston nor in Vancouver for halibut. This arrangement is only possible when buyers know from experience what is to be expected, on the basis of information of landings announced by market authorities. It is reported that in Ostend, herring and sprat were once sold by auction by sample, but now this is no longer practised, due to abuse of this method. When fish is sold without previous inspection, provision is usually made for later adjustment of prices accordint to the actual condition of the fish.

Auction is usually conducted by the ascending method, but in IJmuiden and Ostend, it is carried out by the descending method. In Chikura, auction is by tendering.

Auctioneers

Auctioneers are provided, in the majority of cases, by market authorities. In Chikura, where the market is run by a fishermen's co-operative, auctioneers are co-operative employees. In some markets, as in Bangkok, Karachi, Valletta and Tokyo, auctioneers are wholesalers or fish agents licensed by market authorities. In Boston, Hirtshals and Esbjerg, auction is conducted by licensed commission firms, and in Ostend by the Tally Keepers' Association. In Grimsby, there are no particular firms conducting auctions but each vessel owner is represented by his salesman.

Order of Sale

Order of sale is generally in accordance with order of arrival of landings. The idea here would be to dispose of landings as quickly as possible, giving fair treatment to the vessel owners and allowing the buyers as much convenience as possible. In Bangkok and Karachi, different hours of sale are fixed for fresh fish, dried/salted fish and live freshwater fish. Sometimes fish is auctioned according to species and fishing grounds. It is also possible that several auctions are conducted simultaneously for the same species, as in Gothenburg and Hong Kong. In Grimsby,

the auction starts with the first arrival of the distant-water section. The same species is auctioned in succession of boats so that merchants may be able to follow sales of one species through the market.

Unit of Sale

Sale could be effected by weight or by box and either by lot or by unit. For instance, in Grimsby, a box of 140 lb (or 70 lb for expensive fish) is the unit of sale and buyers can take as many boxes as they wish for the price arrived at. One kilogram is the unit of sale for pla-thu (mackerel) in Bangkok; other fish is sold by weight in baskets. When fish are large, the unit is sometimes individual fish or a portion of fish.

Price

In Gdynia and Havana, the price is fixed by the State, but in other places, fishermen usually have the right to put up a reserved minimum price or to withdraw the fish if they are not satisfied with the highest price offered at the auction (Boston, Chikura, Hirtshals, Esbjerg and other ports). In some countries, a minimum price system is carried out. In Sweden, there is a system of minimum guaranteed prices which concerns certain species of fish. Accordingly, the minimum prices fixed by the State Agricultural Marketing Board are the lowest prices fishermen can expect in the auction at the Gothenburg Market. In case fish cannot be sold at the minimum price, it is taken over by an organization set up for the purpose of utilizing surpluses, and the fisherman is paid a guaranteed price which covers cost and landing expenses. A similar scheme is carried out in IJmuiden and Ostend for certain species. The fish which is not sold above minimum price is sent to fishmeal plants. In IJmuiden, the scheme is financed totally by the industry itself. In Ostend, the scheme is financed partly by the Government and partly by a contribution from ship owners.

Commission for Auction

The rate of commission for the auction service varies considerably from market to market. It is normally charged as a percentage of the proceeds. Boston is an exception. There, the auction fee is a set amount, prearranged between boat owners and commission firms. Commission rates range from about six percent downwards, according to markets and type of fish. It would be difficult to determine a reasonable rate of commission, since this will depend on types and amount of fish dealt with and whether fish is processed or not. Furthermore, the services provided by market authorities and auction companies may include various incidental services, such as sorting, weighing, internal transport, settlement of accounts, and provision of boxes. A close study of the services rendered by market authorities or by auction companies and the part of those services covered by the auction fee would be required to compare the so-called auction fees of the various wholesale fish markets.

Settlement of Accounts

After auction, accounts have to be settled between fishermen and buyers and the necessary fees have to be paid to the port and market authorities. In many cases, settlements are made by the Market Authorities, even in such cases where auction is carried out, not by the market authorities, but by some other agencies. This is the case for the Boston Fish Exchange, Takoradi and Valletta. In other cases, private agencies or firms who conduct the auctions also make the settlement of accounts, vouchers often being provided by the Market Authorities.

Efforts are made to pay the fishermen as soon as possible after auction. In Hong Kong, fishermen usually receive the proceeds within one hour of sale. In Grimsby, crews are paid by noon of the same day.

Buyers are usually given some credit for their payment. In most cases, the buyers are registered with the market and a certain amount of deposit is required, according to the size of their expected purchase. In Hong Kong, buyers purchase fish against such deposit, which has to be constantly replenished. The period of time allowed to buyers for payment, usually at the risk of the market authorities or auction agencies, differs from market to market. It is 24 hours in Boston, five days' grace in Chikura, one week's grace in Grimsby, ten days' grace in IJmuiden. In Takoradi, buyers pay each Tuesday and in Hirtshals and Esbjerg, twice a week. In Boulogne-sur-Mer, checks must be made payable at the latest before noon of the third working day following the sale, except in the case of salted fish and fresh fish for salting or canning, for which a 30 days' draft is allowed.

In many cases, when the establishment of a new wholesale fish market is contemplated, particularly in developing countries, one of the purposes appears to be to protect fishermen from middlemen who often finance and control fishing operations. Where such factors exist, it may be of importance for market authorities to intervene in the settlement of accounts. In this connection, consideration should be given to the advisability of market authorities conducting the auction for fishermen. The Fish Marketing Organization which operates the Hong Kong Wholesale Fish Market is a successful example.

ADMINISTRATION AND ORGANIZATION

There is a variety of patterns in the direction, administration and organization of wholesale fish markets and port terminals. However, almost without exception, harbor and port facilities are planned, constructed and administered by the State or local governments or by some other public body. Most wholesale fish markets are built and administered by some public agency or corporation. But, in some cases, the wholesale fish markets are under the direction of the fishermen's co-operatives or private corporations. Certain types of facilities, such as ice plants, cold storage facilities, fueling stations, various processing plants and repair shops are often constructed and operated by private concerns under the general direction of the market authorities. But, in general, market authorities remain responsible for the construction and maintenance of fundamental market facilities, such as auction halls.

Direction and Responsibilities

It may be argued that port terminals, and perhaps to a lesser extent wholesale fish markets, constitute social capital, the function of which is to serve the common interest of economic development. Such facilities for the public benefit normally do not bear profit directly for the entrepreneur, but are always required as the basis of economic development and people's welfare. This could be the reason why port terminals and wholesale fish markets are normally built and directed by public authorities. If this were done by private industry, one might, in view of the very considerable capital requirements usually involved, be faced with a serious waste of capital through unnecessary competition, or, on the other hand, a situation of monopoly through lack of competion.

The usual arrangement is that real estate in port areas and primary facilities on market premises, such as landing facilities and auction halls, are provided by the State or public bodies administering the wholesale fish markets. Some secondary facilities, such as ice plants, cold storage, processing, supply facilities and the like are often provided by private industries under contract with the market authorities. These secondary facilities mostly represent business operations and could normally be run efficiently by private concerns. However, in Boston, the fish pier is under the direction of a private corporation, the Boston Fish Market Corporation, and auction is administered by another private corporation, the New England Fish Exchange. In Chikura, the port facilities are provided by the Prefectural Government, but the wholesale fish market was built, constructed, and is directed by a fishermen's co-operative. All Karachi's market facilities were built by the Government, but their management is entrusted to a fishermen's co-operative with the assistance of several Government officers especially attached to the wholesale fish market. Various public bodies directing market operations include: the Fish Marketing Organizations in Bangkok and Hong Kong; the Navigation District in Brownsville; "ARKA" (Fishery and Fishing Service Enterprise) in Gdynia; the Harbors Board in Gothenburg; the Market Companies in Bremerhaven and Kiel; the British Transport Commission in Grimsby; the Ghana Fishing Corporation in Takoradi. In Boulogne-sur-Mer, the Chamber of Commerce operates the wholesale fish market.

The variety of ways of directing and administering wholesale fish markets makes generalization impossible, and one should therefore take care to define clearly at the outset of planning individual ports and markets the respective responsibilities of the State, other public agencies and private industries.

Auction is often carried out by the market authorities themselves and sometimes by special private agencies or wholesalers licensed and supervised by market authorities. Buyers are usually wholesalers, processors, retailers and representatives of factories, hospitals or other organizations which require fish in quantity. In some markets, e.g. Gothenburg, buyers need no special license to participate in the auction, but some others require permission from either the market authorities (e.g. Tokyo) or the Director of Fisheries (e.g. Valletta). In most cases, suppliers of fish (fishing vessel owners) and buyers form organizations respectively which represent their interests in the wholesale market. In Bremerhaven and Kiel, owners of steam and motor trawlers have formed a Sea Fish Marketing Company which takes over fish of trawlers from time of landing, and looks after the interests of the trawler owners throughout the auction. In Boulogne-sur-Mer, a Committee in which suppliers and buyers are represented deals with claims with respect to quality which might arise when the fish is delivered after auction.

Finance

Wherever facilities are financed by the State or other public bodies, it appears that capital costs of initial construction are usually financed by the State, while maintenance and running costs are usually met by port or market authorities with revenue from various sources. Here again, however, there are a number of different arrangements which require careful examination with respect to individual port terminals and wholesale fish markets. In Bangkok, maintenance and running costs of the fish market are financed by the Fish Marketing Organization from one percent of proceeds rendered by auctioning agents. In Hong Kong, the Fish Marketing Organization is, as a rule, self-supported by the six percent commission from auction sales, but has received financial assistance from the Government for capital expenditure for expansion. In Tokyo also, a special account is maintained by the Municipal Government with a view to self-support, but funds have had to be supplied for expansion from the general account of the Municipality and also from the State. The revenue coming to port and market authorities includes wharfage, harbor dues, commission for auction sale (wherever auction is practised by port or market authorities), rent of land and buildings received from wholesalers and processors and from various service charges, such as unloading, sorting, weighing, internal transport, supply of containers, income from sale of ice, use of cold storage rooms, water and electricity supply, slipways and repair shops, wherever such facilities are operated by port or market authorities themselves.

Personnel and Duties

Personnel required by port and market authorities depends on the scope of responsibilities taken by them with respect to port and market operations. In Brownsville, where boats deliver the catch directly to processing plants without public auction, the main duties of the market authorities are guarding the premises and maintaining port facilities, while unloading, grading and similar duties are all carried out by private processing firms. In Gdynia, where all operations are carried out by market authorities and all processing and service facilities are run by the State, a great number of workers is employed. The operation methods of most markets are somewhere

between these two extreme cases with variation of scope of responsibilities of wholesale market authorities. Activities, such as unloading, sorting, weighing, internal transport, auctions, settlement of accounts, are in some cases carried out by market authorities themselves and sometimes by vessel owners, by special auction agents, or by buyers. It is, however, always necessary to provide personnel for general administration and supervision and for maintenance of port and market facilities.

Many markets employ temporary laborers to meet the seasonal fluctuations of fish landings.

Common Administrative Services

Common administrative services provided by the market authorities again differ from market to market, according to the organization and responsibilities. Settlement of sales accounts are often made by market authorities. General supervision of sales is normally exercised by the market authority where sales are conducted by agents other than market authorities.

Market intelligence may be another service generally given by market authorities. Reports on landings and prices are published daily, not only for the local market, but also often for other landing places. In Chikura, from where the catch is shipped to large consumption centers, news from consuming centers is constantly received by teletype and telephone, and announced to buyers and fishermen. In Grimsby, a common service for market intelligence is conducted by the Fish Merchants' Association, which also looks after bulk transport of fish by rail for buyers.

Service of the market authorities sometimes includes collection of repayment of loans extended to fishermen. In Hong Kong, the Fish Marketing Organization deducts 15 to 20 percent of sales proceeds to repay loans granted by either the Fish Marketing Organization or the Co-operative Development and Fisheries Department. A similar arrangement is made in Takoradi for Government loans. Where Governments extend loans to fishermen, and fishermen bring their catch regularly to certain wholesale fish markets, such an arrangement has proved useful for efficient operation of loan schemes.

BANGKOK

The Bangkok Fish Market is essentially a local market, mainly supplying the capital with fresh fish. The main purchasing group is a large number of retailers. The market is supplied with both freshwater and sea fish. Carrier boats collect and bring considerable quantities from fishing craft at sea. Trucks bring fish from neighboring districts. Fish and other seafoods are sold by auction. Auctions are carried out by fish agents appointed and directly controlled by the Fisheries Department of the Ministry of Agriculture. They also act as Fishermen's Agents and organize the collection and transportation of small and dispersed landings to the market. Usually, the agents contract with fishermen for delivery of fish; the fishermen borrow money from their agents to conduct fishing operations. Accounts are settled by the fish agents at auction.

The Market Authority is the Fish Marketing Organization, an autonomous body under the Ministry of Agriculture. It manages the market, supervises sales and is responsible for auctioning and maintenance. If a fish agent refuses to auction, the Organization may itself sell by auction.

The Market was built by the Government. Its running costs are covered by fees levied on the fish agents.

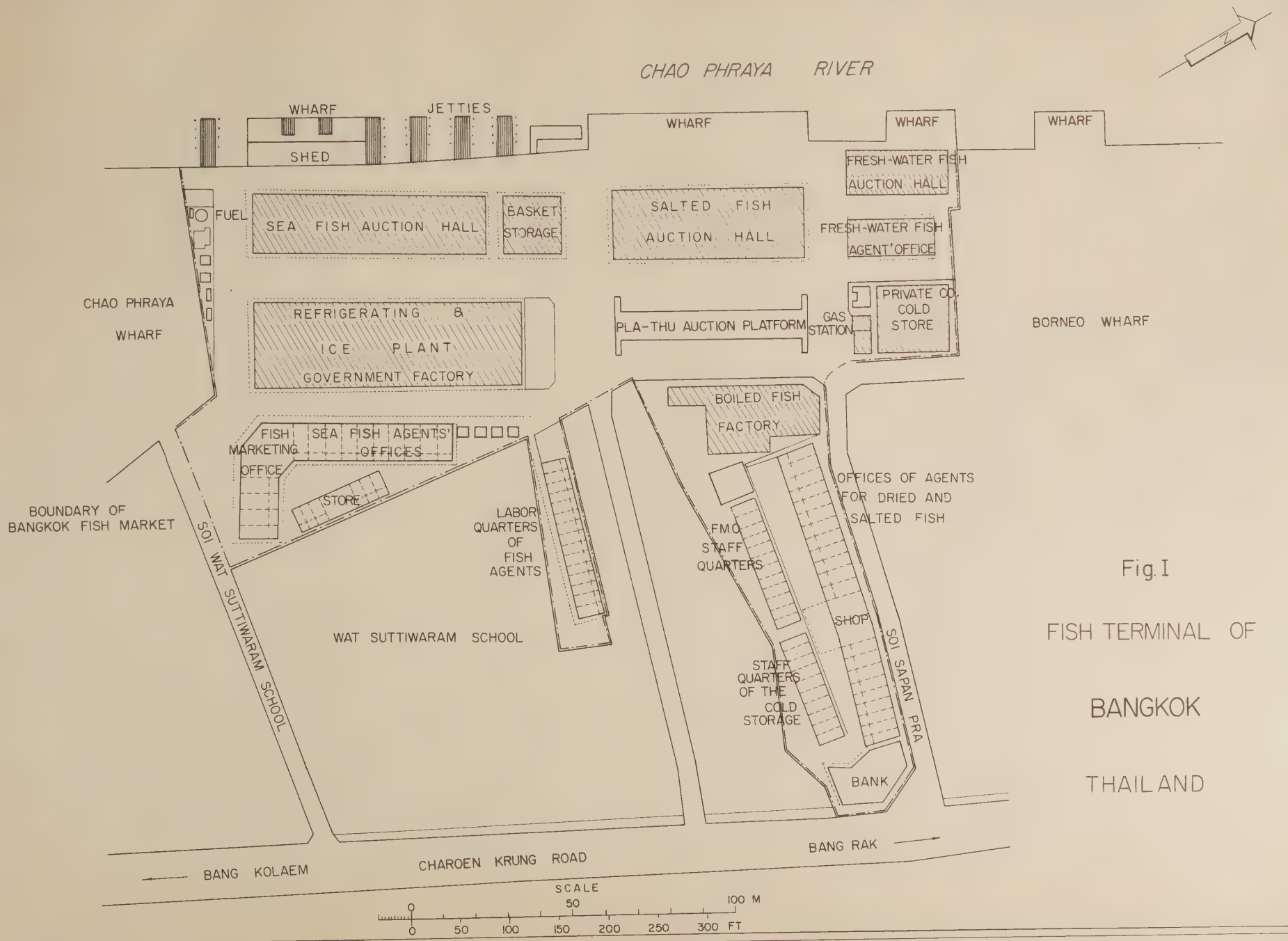


Fig. I

FISH TERMINAL OF

BANGKOK

THAILAND

BANGKOK - - - - - THAILAND

I. GENERAL

1. Location

Bangkok (population: 2.2 million) is the capital of the Kingdom of Thailand. The market is in the Yannawa District of Bangkok on the Chao Phraya River about 30 km from the Gulf of Thailand.

2. Types of Fishing Vessels Served

Fish carriers, 20 to 30 GRT, holding six to nine tons of iced fish.

Chinese-type purse seiners, 20 to 30 GRT. Most have diesel engines.

Mechanized Japanese-type diesel-power trawlers of 70 to 80 GRT and Thai-type trawlers of 20 to 35 GRT.

Mechanized stake net boats, gillnetters, and small angling boats.

Non-mechanized craft such as rowboats, sailboats and canoes.

3. Species of Fish

Freshwater fish (live fish), mainly snakehead and catfish; saltwater fish, mainly Indian mackerel.

4. Fishing Areas from which Fish is Landed

Fishing grounds include both marine and inland fishing areas. The inland fishing areas are river basins and swamps on Thailand's central plains. Marine fishing areas are the coastal waters of the Gulf of Thailand. Trawler exploitation has begun during recent years in the central part of the Gulf. Gulf fisheries are confined mainly to within the 20-meter depth line. The Japanese-type trawlers make trips of seven to nine days. Purse seiners are away from port for five to eight days. Other craft return to shore within 24 hours. In addition, there are many fish carriers of the same type and size as the purse seiners. These carriers often engage in fishing, but also collect fish from fishing craft up to 900 km south of Bangkok and transport fish to Bangkok and other markets.

5. Marketing Areas to which Fish is Shipped

Most of the fish brought to Bangkok is sold locally. A small amount is dispatched to central, northern and northeastern areas.

6. Marketing Methods

By auction.

7. Market Authorities and Users

7.1 Market authority

The Fish Marketing Organization, an autonomous body set up in 1953 under the Ministry of Agriculture, administers and maintains the market and supervises auctioning.

7.2 Users

Suppliers include fishing boat owners, the Central Fishery Co-operative, and the fish agents who collect fish directly from fishermen and bring it to Bangkok.

Buyers include the interior wholesale trade, more than 1,000 retailers, and the processing industry, which buys fish primarily for boiling.

8. Statistics

8.1 Fishing fleet

Seventy-eight percent of the 1961 fish supply came to the market by truck from landing places along the coast. Twenty percent came from fish carriers, most of which also engaged in purse seining or trawling. Two percent came by rail. About 400 fish carriers and 100 trucks were delivering fish in 1961. A negligible amount of fish was supplied by a small number of fishing boats.

8.2 Number of trips

During 1961, fishing craft and carriers brought fish to the market in about 1,500 trips.

8.3 Quantities and value of landings

The following table gives quantities of fish sold monthly during 1961 and its annual value at the Bangkok Fish Market:

Q = Metric tons
V = Baht [1]

	1961		
	Freshwater fish (live caught)	Marine fish, fresh	Fish, dried and salted
TOTAL: Quantity	4 503	34 945	[2] 1 878
Value	35 887 900	144 175 228	4 881 206
January	500	2,799	119
February	466	2,093	97
March	540	2,453	94
April	408	2,743	145
May	368	2,895	147
June	299	3,211	407
July	245	3,325	188
August	220	2,892	133
September	219	3,076	46
October	267	3,405	68
November	368	2,980	33
December	553	3,073	33

[1] Approximately 21 Baht = US$ 1
[2] Includes 368 metric tons of fish meal

8.4 Disposition of landings

A great proportion of the catch is consumed fresh but a small proportion of the fish, usually Rastrelliger mackerel, is boiled for transport to the interior. Boiling preserves fish for short periods under tropical conditions without using ice or any other refrigerant. During glut periods when fish prices go down, the Cold Storage Organization, an autonomous government body, purchases surplus fish and freezes and stores it for release during lean periods. There is no important fish reduction industry in Bangkok.

8.5 Users

Among various market users, fish agents known as "pair pla" act both as auctioneers and as agents for the fishermen. The fish agents are grouped into three categories: agents for fresh marine fish, agents for salted and dried fish, and agents for live freshwater fish. There are 11 fish

agents for sea fish, 4 for salted and dried fish and 6 for freshwater fish. One of the fish agents dealing with sea fish is a fishing co-operative society. The others are private companies.

II. LAYOUT AND FACILITIES

1. Plan and Specifications

Figure I shows the over-all plan and layout. The market covers 2.91 hectares (7.28 acres). It has a frontage of 246 meters along the Chaophaya River where boats may berth.

2. Facilities

2.1 Selling area

There are three auction halls, separated for the three categories of fish agents, which have a total floor area of 3,123 m^2. The floor is divided into a number of auctioning spaces, one space being reserved for each fish agent. Live freshwater fish are sold in a covered enclosure at one end of the market. The salted and dried fish auction hall is in the middle of the market.

2.2 Merchants' premises

A two-storied building with a total of 847 m^2 ground area houses the offices of the Fish Marketing Organization and the fish agents' offices. A two-storied house of 441 m^2 floor area is used for lodging the fish agents' workers. A house of 648 m^2 area is used to lodge the Fish Marketing Organization workers.

2.3 Processors

There is a private fish boiling plant in the market. There are seven other plants outside the market.

2.4 Ice plants

There is one ice plant within the fish market, owned by the Cold Storage Organization. It has a capacity of 80 tons per day.

2.5 Cold storage

There are two cold storage warehouses in the market area. The first - with 1,000 tons capacity - is managed by the Cold Storage Organization. The second - 120 tons capacity - is operated by a private company.

2.6 Landing equipment

All fish is transferred from boat to shore by hand.

2.7 Containers

The containers used to transfer fish by trucks from coastal landing places to the market are mostly wooden boxes holding 80 to 100 kg of iced fish. The containers used for handling fish in the market are mainly split bamboo baskets of several types. The deep bamboo basket, known as "lua" has a net content of 10 to 20 kg. The flat bamboo basket or "tao" has a net content of 8 to 12 kg. Salted and dried fish are sold in baskets of 60 kg, except for highly-priced fish. The pla-thu (Rastrelliger sp.) is sold in bigger baskets of 120 to 200 kg net.

The live freshwater fish are kept in wooden containers holding 40 to 80 kg of fish.

In the market premises, a floor space is reserved for storage of baskets and other containers.

2.8 Internal transport equipment

Transport is mostly done by manual labor.

2.9 Fresh water and power supply

Fresh water for drinking and cleaning fish and electric power for light and cold storage and ice plant operation are available.

2.10 Transport

Fish can be transported in and out of the Bangkok Fish Market by road or water. There is no railway siding in the market premises.

2.11 Amenities

There is an assembly hall for lectures and meetings, bath and restaurant facilities and a club with recreation equipment, including four billiard tables. There are first aid services, library, fisheries museum and a radio station for broadcasting weather and market information, attached to the assembly hall. Fire-fighting equipment is provided.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

The fish carrier boats are berthed in order of arrival and the unloading by hand is done in portions depending on the speed of sale. Thus the fish is stored in the holds of the carrier until the earlier portions which were unloaded are sold. A shed (total floor area of 288 m^2) is provided for sorting and handling fresh fish. All species are generally sold by weight.

The fish agents are responsible for handling and laying out the fish. Laborers do the manual work, such as handling the fish from the vessels, laying out and icing. There are two groups of laborers; the inners who work for the fish agents and the outers who work for the fish buyers.

The inners receive their salaries plus additional bonus arising from the charges on the unloading of the fish. Their duties are to handle fish from the vessels and trucks, sort and pack fish in containers for bidding. About 200 men are inners.

The outers earn their daily wages for their work in moving the fish, after auction, into vehicles or boats. About 200 men are outers.

2. Organization of Sales

The auction hours for fresh fish start at 0400 hours for pla-thu and 0600 for other fish. The daily auction is usually closed from 1030 to 1100, depending on the daily supply.

Salted and dried fish are auctioned from 0700 to 1400 hours. The live freshwater fish are auctioned from 0330 to 1000. All fresh marine fish brought to Bangkok are classified into two groups: pla-thu and miscellaneous. The pla-thu, in view of its larger quantity, is auctioned in an open hall opposite the office of the Organization. It is sold by weight according to Fisheries Department regulation. The kilogram is the sales unit. Other fish are sold in baskets, such as "lua" (10 to 20 kg), and "tao" (8 to 12 kg), or as individual fish, if highly priced, or in pieces, if fish is big. Dried and salted fish are sold in basket lots of 60 to 200 kg. Live freshwater fish is sold in containers holding 40 to 80 kg of fish. In all the sales except the marine miscellaneous group, the fish is weighed after the final bidding and value assessed according to weight.

Bidding is started by the auctioneer. He announces a starting price and the buyers bid from that price to the point of the highest bid. It is thus an

ascending auction. There is no restriction on the rate of increase of the bids. Auctioneers are the fish agents. There are three categories of fish agents.

2.1 Fish agents for fresh marine fish

Most fishermen obtain loans from the fish agents for carrying out fishing operations. It has been a long-established agreement that the fishermen are obliged to send their catches for sale to their particular fish agents. Six percent commission and other incidental costs (e.g. transport, freight and icing) are deducted by the agents from the gross sale of the products. In addition, fish agents deduct a sum of money, according to Fisheries Department regulation, as the "debt clearance", providing security for their loans at five percent of the sales proceeds. The debt clearances are kept by the agents for settling the accounts at the end of the contracted fishing season. Any fishermen who has cleared the debts or does not obtain a loan will not have to make the "debt clearance".

The Central Fishery Co-operative also acts as a fish agent. Each member has the right to obtain loans from the co-operative at 12 percent interest per annum. In this case, the fishermen do not have their sales proceeds deducted for the "debt clearance". If, at the end of the year, the co-operative has a profit, the members will obtain the dividend and the rebated money arising from the amount of their sales.

2.2 Fish agents for dried and salted fish

The way in which the fish agents run their business is similar to that of the fish agents for fresh marine fish. The main difference is that the "debt clearances" are three percent of the sales.

2.3 Fish agents for live freshwater fish

In most cases, the fish agents will give loans to the fishermen who are licensed lessees of inland fisheries. They also provide customers, free of charge, with rectangular fish containers made of galvanized iron protected with wooden frames, for delivering live freshwater fish to the Bangkok Fish Market. After the daily sale of the products, the agents will deduct the commission at six percent of the sales, plus other incidental expenses, and the balance of the money will be paid at once, or forwarded, to fish owners.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

In 1953, an autonomous body under the Ministry of Agriculture, the Fish Marketing Organization, was established as a juridical body to operate fish wholesale

markets in Thailand and to control the fish marketing system.

The Fish Marketing Organization has the power to construct, purchase, procure, dispose, hire, let on hire, own or possess various properties and to borrow money or goods, loan out money or goods. Whenever the Fish Marketing Organization deems it expedient to establish a fish wholesale market for any locality, it may, after approval has been obtained from the Minister of Agriculture, declare its establishment by notification in the Government Gazette. The fish wholesale market is conducted and looked after by the Fish Marketing Organization.

There is a committee of the Fish Marketing Organization consisting of a Chairman and not less than four, but no more than six, other members. The Council of Ministers appoints the Chairman and members of the Committee of the Fish Marketing Organization. The Committee has the power and duty to lay down the policy and to control generally the activities of the Fish Marketing Organization. The Committee represents the Fish Marketing Organization as regards third persons, but the Committee may entrust the Director or any officer of the Fish Marketing Organization to be the representative. The Committee has the power to appoint or remove the Director of the Fish Marketing Organization with the approval of the Agriculture Minister. The Director administers the affairs of the Fish Marketing Organization according to the policy and rules and regulations laid down or entrusted to him by the Committee.

The fish agents are controlled directly by the Director-General, Fisheries Department. No person may undertake the activities of a fish agent or act as auctioneer of fishery merchandise at the fish wholesale market unless he has obtained a licence and has paid the fees. The Director-General of the Fisheries Department, with the approval of the Minister, has the power:

to determine the maximum charges for auction, transport and other expenses to be collected by the fish agents from the owners of fishery merchandise or the buyers of fishery merchandise;

to determine the procedure of sale by auction and the units of weight or quantities of fishery merchandise;

to regulate berthing, carriage and traffic at the fish wholesale market;

to require the fish agents to keep accounts and documents according to the prescribed forms;

to inspect the account books or various documents in the office of the fish agents;

in case the fish agent refuses to auction fishery merchandise, the Government has a right to order the Fish Marketing Organization to carry on the sale of fishery merchandise by auction at the fish wholesale market.

No fish agent at the fish wholesale market may buy fishery merchandise for his own account without the consent of the owner of the fishery merchandise, in which case no brokerage may be charged from the owner of the fishery merchandise. There is no quality control inspection service at present.

2. Finance

The Fish Marketing Organization prepares a yearly budget showing capital and working accounts. The capital costs of construction are borne by the Government. The cost of the building; and other associated costs, since the commencement of

the market establishment up to the present was around 12 million Baht. (US$ 571,430).

Maintenance and running costs are met by the income which the Fish Marketing Organization obtains from the following sources:

Landing charges, auction charges for using containers, storage and associated charges. Practically all these charges are collected from the fish agents who pay, as a lump sum, one percent of the total sales proceeds to the Fish Marketing Organization to meet the above charges. In addition, the fish agent as an auctioneer is permitted to charge five percent of the gross sales as a commission for himself. Thus a total of six percent is charged on the gross sales proceeds. Exemption or reduction of fees or service charges in favor of fishing co-operatives may be granted.

Twenty-five percent of the charges collected by the Fish Marketing Organization is set aside as a fishermen's welfare fund. The balance of 75 percent is utilized for maintenance services and future expansion of market facilities. The yearly income earned by the Fish Marketing Organization is paid over as state revenue, after deducting the running and other proper expenses such as for maintenance, depreciation, contribution to provident fund for employees of the Fish Marketing Organization, ordinary reserve set aside for deficit, reserve set aside for expansion of the work and other capital investment as approved by the Council of Ministers. If the income is not sufficient to meet the operating expenses, other than the reserves mentioned as above, and the Fish Marketing Organization is unable to obtain the money by any other means, the Government makes up the deficit in the finance.

3. Personnel and Duties

General administration	:	72 employees (38 office staff and 34 laborers)
Inner laborers	:	200 men
Outer laborers	:	200 men
Fish agents	:	24 (total number)

4. Common Administrative Services

The Fish Marketing Organization supervises the sales, but the monetary transactions are made directly among the fish agents, fishermen and the buyers.

5. Charges

Fish agents' commission: see under Finance (IV.2)

The charges for licensing of fish agents are given overleaf.

	Particulars	Fees per year
1.	License for undertaking the activities of a fish agent of the category of fresh fishery merchandise (saltwater and freshwater fish)	5 000 Baht
2.	License for undertaking the activities of a fish agent of the category of salted or dried fishery merchandise (saltwater and freshwater fish)	3 000 Baht
3.	License for undertaking the activities of a fish agent of the category of fresh fishery merchandise (for freshwater fish only)	500 Baht
4.	License for undertaking the activities of a fish agent of the category of salted or dried fishery merchandise (for freshwater fish only)	300 Baht
5.	License for auctioneer	200 Baht
6.	Duplicate copies of license	20 Baht

B O S T O N

The State of Massachusetts is proprietor of the market area. A private company, the Boston Fish Market Corporation, has leased the ground and manages the market. The New England Fish Exchange, another private company, manages the auction. Commission firms provide auctioneers.

Small and medium-sized vessels supply the market. Fishing grounds off the Atlantic coast are comparatively near; voyages are short, nine days at most. Generally, fish is filleted. About 40 percent is dispatched all over America as frozen fillets.

Although small parts of catches are sold by agreement between buyers and shipowners, most fish is auctioned by species, without previous inspection. Top quality is taken for granted. Catches are not unloaded until the auction finishes. This is a type of exchange selling in which the buyer knows by experience what quality to expect.

As soon as one species is auctioned, this species is immediately unloaded from all ships. Disputes on quality are settled by resale or adjudication by an Exchange official. There are neither minimum nor maximum prices.

This system saves time, space and costs and avoids unnecessary handling and exposure by allowing fish to be kept in holds until delivery. Auction halls and containers are not necessary. The special conditions which allow satisfactory operation of this system are: short voyages and resulting first-rate quality and freshness; small number of species and species sorting aboard, making possible quick unloading by species; few but well-established standards of demand specifications.

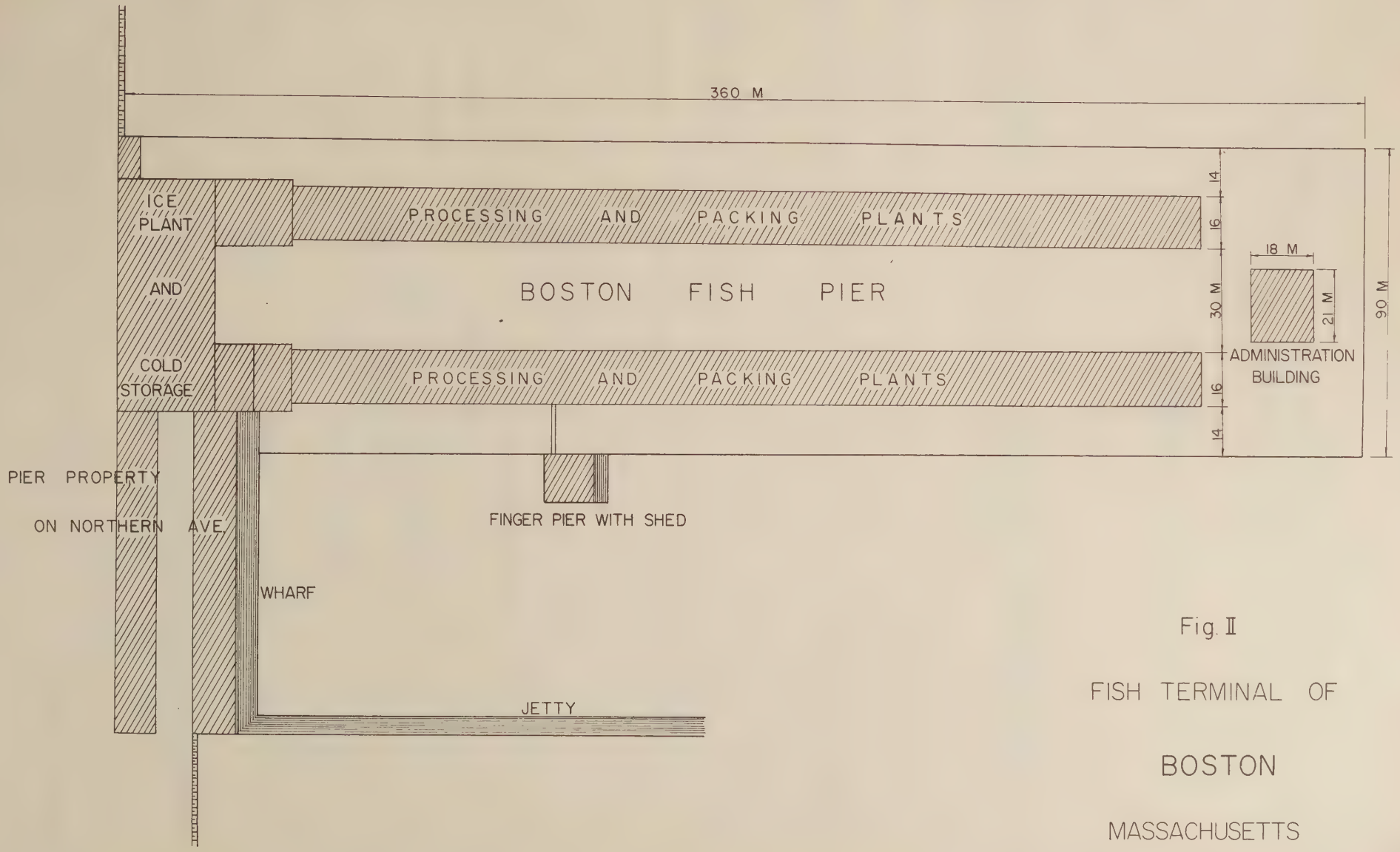


Fig. II

FISH TERMINAL OF

BOSTON

MASSACHUSETTS

U.S.A.

BOSTON - - - - - UNITED STATES OF AMERICA

I. GENERAL

1. Location

Boston (population: 697,000) is the capital of the state of Massachusetts and is on the Atlantic coast of that northeastern state. It is the center of a metropolitan area with a population of 2.5 million.

2. Types of Fishing Vessels Served

Otter trawlers (constituting most of the fleet), line trawlers, scallopers and gillnetters.

3. Species of Fish

Predominantly haddock, cod and pollack.

4. Fishing Areas from which Fish is Landed

4.1 Georges Bank (XXII) 1/ - large and medium trawlers

4.2 The Channel (XXII) 1/ - medium trawlers

4.3 Massachusetts Coast (XXII) 1/ - small trawlers

4.4 Gulf of Maine (XXII) 1/ - small trawlers

4.5 Nova Scotia (XXI) 1/ - large and medium trawlers

5. Marketing Areas to which Fish is Shipped

Fresh products (including fillets) are shipped to eastern and midwest states. Frozen products (frozen fillets) are shipped all over continental U.S.A.

1/ Areas as designated by International Commission of Northwest Atlantic Fisheries.

6. Marketing Methods

Primarily by auction (without previous inspection by the buyer).

7. Market Authorities and Users

7.1 Market authority

The Boston Fish Market Corporation, a private corporation, leases the pier from the State of Massachusetts and charges wharfage fees to the vessels; it also rents the buildings to the wholesale firms.

New England Fish Exchange, a private corporation, manages the auction at the Boston Fish Pier.

Atlantic Avenue Market is another Fish market, secondary in importance to Boston Fish Pier. It is about one mile from the Fish Pier.

7.2 Users

Users include shipowners and fishermen's associations who supply fish and commission dealers who provide Boston with fresh and frozen products to complement local landings. Shipments include foreign products. There are also the buyers, processors, wholesalers, and retailers.

8. Statistics

8.1 Fishing fleet

Otter trawlers - Boston (31 December 1960)

Size	up to 50 GRT	50 to 150 GRT	over 150 GRT	Total
Number	9	34	25	68
Percentage of total	13.2	50	36.8	100

In addition, 12 to 20 otter trawlers from other ports land occasionally at Boston Fish Pier.

Line trawlers: eight small trawlers.

Scallopers are not based at Boston. Some scallopers from the port of New Bedford occasionally land at Boston. This has varied from none to 45 trips annually in the past few years, depending on conditions at New Bedford.

Gillnetters: There are no vessels operating regularly as gillnetters in Boston, but two or three of the small line trawlers gillnet for mackerel for a short time each spring.

8.2 Number of trips

	1960	1959
Otter trawlers		
Large (over 150 GRT)	663	778
Medium (50 to 150 GRT)	1 016	1 159
Small (below 50 GRT)	330	350
Line trawlers	334	363
Others	460	341

Trips made by small trawlers average two days, maximum three days. Trips by medium trawlers average five days, maximum seven days. Trips by large trawlers average eight days, maximum nine days.

8.3 Quantities and value of landings

8.3.1 Quantities of landings made in Boston during 1960 are shown by months as follows:

	Pounds (lb)
January	6 295 085
February	8 565 896
March	12 315 208
April	12 315 208
May	6 007 224
June	9 363 163
July	10 169 266
August	10 573 363
September	9 669 488
October	10 082 703
November	8 229 354
December	6 168 383
Annual total	109 754 341
	(49 800 metric tons)

(Predominantly haddock, cod and pollack)

Of the total volume, 98 percent was landed at Boston Fish Pier.

Boston Fish Pier landings by type of boat (1960)

Boat	Catch (1,000 lb)	Percentage
Otter trawlers		
Large	62 985	58
Medium	42 097	39
Small	1 982	2
Other vessels	1 291	1
Total	108 355	100

8.3.2 Value of yearly landings at Boston Fish Pier during 1950-1960 is shown as follows:

	US Dollars
1950	13 556 525
1951	14 310 547
1952	14 343 776
1953	12 002 390
1954	10 787 725
1955	9 225 815
1956	10 544 663
1957	11 176 824
1958	12 633 889
1959	11 250 520
1960	9 627 143

8.4 Disposition of landings

About 60 percent of total landings are sold as fresh fish and fillets; about 40 percent as frozen fillets.

8.5 Users

Fishing enterprises: Twenty-two of the 68 fishing boats are owned by five firms (which are also wholesalers and processors). The rest are individually owned. A few individuals own more than one boat. The vessel owners are united in an association called the Federated Fishing Boat Owners. The fishermen are united in a trade union called the Atlantic Fishermen's Union.

Buyers: There are 40 to 50 firms that buy fish, each of them both a

wholesaler and processor. There are no retailers who buy directly from vessels. Retailers buy from the wholesalers. The Boston Fisheries Association is an association of wholesale dealers and processors.

II. LAYOUT AND FACILITIES

1. Plan and Specifications

The Boston Fish Pier, built in 1914, is 1,200 feet (360 m) long and 300 feet (90 m) wide. A double row of buildings on the adjacent street also belongs to the Fish Pier area. The entire property comprises 537,000 square feet (49,900 m^2). The Pier has a center street 100 feet (30.5 m) wide. The buildings on each side are about 55 feet (16 m) in depth and the aprons on the water sides of the buildings are each 45 feet (14 m) in breadth. Figure II shows the layout of the Fish Pier.

2. Facilities

2.1 Market hall (auction hall)

The auction hall on the first floor of the administration building located on the seaward end of the Pier is 60 by 70 feet (18 by 21 m); no fish is brought into the auction hall.

2.2 Administration building

In addition to the auction hall, the administration building also quarters the New England Fish Exchange which handles the sales and the account of the sales of each vessel. The administration building has three stories and contains offices of commission dealers, brokers, and some supply firms.

2.3 Processors

There are 44 "stores" in the buildings that line the Pier, occupied by 30 fish processing and packing firms. Some of these occupy three or four "stores". Sixteen other firms occupy buildings in the Fish Pier area and at Atlantic Avenue Market, about one mile from the Fish Pier. There are no firms that salt, smoke or process by-products on the Fish Pier.

There is no fishmeal plant on the Fish Pier or in the immediate vicinity. Most of the offal and unsaleable fish is processed at a pet food cannery in another section of Boston, or at a fishmeal plant in another city. Some is sold as bait for lobster fishermen and small line trawlers.

2.4 Ice plants

The Market Corporation maintains an ice factory. Daily capacity is 3,500 tons of crushed ice, which is delivered to plants by an overhead track that runs along roofs of plants. Delivery to vessels is by chute, directly from the ice factory.

2.5 Cold storage space

On the land end of the Pier there is a six-story refrigeration plant and cold-storage warehouse, with cold storage room of 42,241 cubic feet (1,180 m3) and deep-freeze storage room of 1,234,323 cubic feet (34,560 m3), including 11 plate freezing devices.

2.6 Discharging facilities

Tidal range is about 12 feet (3.6 m) and unloading is possible at all levels.

Pier has about 2,500 feet (760 m) of unloading space.

Unloading is carried out by means of canvas baskets with metal frames hoisted by mechanical winches.

2.7 Containers

From the baskets the fish are unloaded into wooden boxes to be weighed on the pier. Wooden boxes are then conveyed to fish plants or in some cases reloaded into larger carts to be brought to plants by tractors. Boxes are owned by individual buyers. The boxes are cleaned by hot water under pressure.

2.8 Fuel and supplies

Private firms are running oil vessels that tie up at the pier. The pier also houses ship chandlers, gear suppliers, carpentry shop, blacksmith shop, engine supplier, bank, radio and electronic shops, fishermen's supplies, an equipment repair shop, and a union office.

2.9 Transport

Two railway tracks enter the pier to berths at the cold storage plant. However, most fishery products leave the Fish Pier on large refrigerated trailer trucks. Smaller trucks make local deliveries. Trucks can be loaded or unloaded at any firm on the pier or the cold storage plant.

2.10 Amenities

Each plant maintains rest rooms, shower-baths, and first aid facilities for plant employees. There is a public lavatory in the administration building. One canteen and one restaurant are located on the pier. Two restaurants and one dining room are located in the immediate vicinity.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

There is no display of the fish landed. It remains in the hold until unloaded for the buyer.

On landing, the vessel representative informs the New England Fish Exchange of the estimated catch by species. This is announced to the buyers on a bulletin board. The buyer does not see the fish but knows from experience what is to be expected.

2. Organization of Sales

All fish unloaded from vessels at the Boston Fish Pier is sold by auction, without previous inspection by the buyer. Fish unloaded at dealers' plants on the Atlantic Avenue dock (about one mile from the Fish Pier) is sold by arrangement between dealers and vessel owners. Fishery products shipped to Boston by truck or other vehicle from other ports, and handled by commission dealers on the Fish Pier, are sold by arrangement.

The bulk of the total fish handled at Boston is sold by auction. Auction sales begin at 0730 hours. The vessels employ auctioneers to sell the catch. Auctioneering service is provided by five commission firms on the Fish Pier who are licensed by the New England Fish Exchange to sell fish. The Exchange itself does not maintain auctioneers. The commission firms mentioned above also handle fish received from other ports on consignment.

Vessel owners have the right to refuse the highest bid if not acceptable. The New England Fish Exchange also has a representative at the auction to record the sales. Prices are based on supply and demand.

Fish is sold by species. For example, all haddock on all vessels will be sold before any other species is put up for bid. In this manner, all vessels can commence unloading at the same time, even before the entire landings are sold.

Unloading commences at 0745 hours. Buyers bid on a particular amount of a species of one vessel, and can purchase parts of the landings of many vessels. Likewise, the catch of one vessel will be sold to many buyers.

If fish is not of the quality the buyer expects, and the vessel representatives agree, a "sell-over" will be held, for all first sales are for top quality fish only. A "sell-over" is a resale of fish. It usually takes place for a particular amount of one species. Announcement is made of the "sell-over" by

blowing a whistle that can be heard throughout the Fish Pier. Buyers can learn by phone what is to be resold, and any interested buyer can appear and bid. Many times the first buyer will not get the lot that he bought at the first sale. If the vessel representative does not agree, an official of the Exchange will decide quality, and may or may not call for a "sell-over", which would be at a lower price. All "sell-overs" are held at the auction room in the Exchange building.

There are no maximum or floor prices.

The Exchange records all transactions concerning the sales of the landings.

The buyer must provide transportation and containers for fish from vessel to plant.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

Real estate of the Fish Pier and adjacent areas is owned by the State of Massachusetts and is leased by the Boston Fish Market Corporation.

Quality control is maintained by the individual firms with the aid of state and federal agencies.

2. Finance

The Boston Fish Market Corporation is responsible for maintenance of buildings and pier installations, and bears the expenses of maintaining buildings and piers. Private firms in the market area pay rent to the Market Corporation for the buildings and services. The Market Corporation receives payments for use of scales during unloading, berthing charges, electricity and heat in plants.

3. Personnel and Duties

The following people were employed by the Market Corporation as of August 1961:

5 employees for general administration
10 employees for pier maintenance
12 employees for pier protection
75 workers in ice and cold storage plant

Total: 102 persons

4. Common Administrative Services

4.1 Payments for sales

The New England Fish Exchange prepares a bill of settlement to the companies for the fish purchased. This must be paid within 24 hours from the time unloading is completed. Failure to do so results in loss of permit to purchase fish through the Exchange.

The Exchange also prepares a bill of settlement with the vessel. The Exchange makes this deduction from the proceeds: fee for book-keeping service; various fees and charges for auctioneers, the Market Corporation and suppliers of ice and water. The Exchange uses the deducted money to pay these charges. The Exchange pays the vessel immediately upon completion of book-keeping, the same day the vessel landed.

4.2 Market intelligence

The U.S. Bureau of Commercial Fisheries provides a news service giving information concerning landings and prices at Boston and other important U.S. fish markets.

4.3 Promotion of fish consumption

An association of Pier dealers maintains public relations with the consumer.

4.4 Agreements with users and regulations

"Rules and Regulations of the New England Fish Exchange" provided by the United States District Court for the District of Massachusetts, govern the purchase and sale of fish on the New England Fish Exchange in Boston. These Rules and Regulations also govern reports and settlements on fish purchased and sold on the New England Fish Exchange.

5. Charges 1/

Wharfage fee is US $ 0.50 per 1,000 pounds unloaded, which allows dockage space until next sailing.

1/ The Boston Fish Market Corporation receives revenue not only from fishery sources but has other income not directly related to fisheries.

Charges for weighing scales range from $ 5.00 to $ 7.00 each per trip, according to the number used.

The auctioneering fee is not on a percentage basis but is prearranged at a set amount.

The Exchange deducts a fee of one percent of the gross value of landings for its book-keeping services.

B O U L O G N E - S U R - M E R

From Boulogne-sur-Mer, France's largest fishing port, coastal and deep-sea fishing is maintained, the latter generally at medium distance. Fluctuations in the quantities landed are relatively small through the whole year. The market preponderantly serves France with fresh fish, but fish is also processed and exported. Land and water facilities of this modern harbor were constructed and are maintained and managed by the Chamber of Commerce. Costs are covered by harbor, market and sales dues split between sellers and buyers.

Fish displayed on the quay for buyer inspection is to some extent sorted and packed in privately-owned special boxes when at sea. Fish sorted after landing, is packed in boxes belonging to the Chamber of Commerce. Sales take place by ascending auction but there are also sales by private agreement. The Chamber of Commerce holds the concession for the auction which is conducted by Chamber-appointed agents. The auction takes place in a special building separate from the fish on display. The seller is obliged to give a written statement concerning species, quantity and weight of his goods set up for sale. Sales concluded by private agreement must also be posted on the bulletin board in the hall. The order of sales in the auction is decided by drawing lots; large and small vessels alternate; ships registered at Boulogne-sur-Mer have precedence. Fish is delivered on the quay to buyers by sellers, not by the Chamber of Commerce, whereas payment is done by the Chamber of Commerce clearing-office.

Fig. III

FISH TERMINAL OF

BOULOGNE-SUR-MER

FRANCE

BOULOGNE-SUR-MER - - - - - FRANCE

I. GENERAL

1. Location

Boulogne-sur-Mer (population: about 50,000) is at the mouth of the Liane in the department of Pas-de-Calais. It is the leading fishing port of France.

2. Types of Fishing Vessels Served

2.1 Trawlers

The bulk of the fleet consists of steel trawlers of recent construction, engaged almost exclusively in deep-sea fishing. Fishing trips last up to two weeks or longer, depending on size and distance of the fishing grounds. Each trawler has 20 to 25 crew.

2.2 Small-scale fishing fleet

This consists of small trawlers and long-liners, mostly 25 to 50 tons, mainly of wood. They perform almost all kinds of fishing, and deliver fish of first class quality owing to their relatively short voyages.

2.3 Others

Small boats of less than five tons.

3. Species of Fish

Main species are herring, mackerel, whiting, cod, plaice, rays and saithe.

4. Fishing Areas from which Fish is Landed

Fishing grounds usually worked are the English Channel, the North Sea, coasts of Norway, Iceland, Ireland and Scotland, and the Atlantic banks (Grande Sole, Petite Sole, Porcupine).

5. Marketing Areas to which Fish is Shipped

Fish is shipped from Boulogne-sur-Mer to all parts of France and to Germany and Switzerland, owing to a very rapid and well organized railway and road network. Eight trains of fresh seafish leave the town daily. Annual shipments of fresh seafish are estimated at 80,000 metric tons.

6. Marketing Methods

The fish is sold by ascending auction or by private agreement.

7. Market Authorities and Users

7.1 Market authority

The Fish Market and the auction are under the control of the Chamber of Commerce of Boulogne-sur-Mer as concessionaire.

7.2 Users

Suppliers: the fishing industry.

Buyers include fish merchants, fish curing enterprises, canners, importers and manufacturers of fish byproducts.

8. Statistics

8.1 Fishing fleet (31 December 1960)

8.1.1 Steam and motor trawlers

The trawler fleet consists of 74 boats totalling 31,000 tons, with the following breakdown:

Tonnage	from 100 to 200 tons	from 201 to 500 tons	from 501 to 1,000 tons	Total
Number	5	41	28	74

The trawlers are up to 60 m long and are equipped with wireless radio, ship to shore telephone, radio direction finders, echo-sounders, radar, Decca Navigator System instruments.

8.1.2 Small-scale fishing fleet

There were 97 small trawlers and longline boats, with the following breakdown:

Tonnage	5 to 10 tons	11 to 25 tons	26 to 50 tons	over 50 tons	Total
Number	10	12	69	6	97

8.1.3 Small boats

There were about 100 boats of less than five tons.

8.2 Number of trips

The steam and motorized trawlers and the small-scale fishing fleet together completed about 2,737 trips in 1960. During the summer, mainly in July, when fish consumption drops, the fishing companies will overhaul, repair and outfit their ships.

8.3 Quantities, value and disposition of landings (1960)

Figures are given below for the steam and motorized trawling fleet and the small-scale fishing fleet.

Month	Landings		Disposition		
	Quantities	Value	Fresh for human consumption	For Salting	For Canning
January	9 823	10 169 927	8 866	376	581
February	9 838	10 530 164	8 876	687	275
March	11 357	10 585 291	9 839	1 243	275
April	9 135	9 147 014	7 144	130	1 861
May	9 804	8 190 396	8 078	67	1 659
June	6 596	6 327 225	6 248	61	287
July	6 229	6 620 742	5 001	324	904
August	11 788	9 588 530	8 752	1 508	1 528
September	12 584	11 254 185	7 236	3 182	2 166
October	11 765	12 258 329	8 610	1 805	1 350
November	13 836	11 580 820	9 035	3 405	1 396
December	7 782	9 595 857	5 949	1 273	560
Annual Total	120 537	115 848 480	93 634	14 061	12 842

Quantities = metric tons
Value = New Francs (4.93 NF = 1 US $)

The steam and motorized trawling fleet furnish about 92 percent of the total landings.

The relatively constant level of landings and of values the year round should be noted, the lowest points being reached in June and July and the highest during the herring season that begins in August.

Since 1959, the growing sales of filleted fish have led almost all merchants to process fish into fillets. Filleting is generally done by hand. Of the 94,000 tons of fish bought by the merchants in 1960, about ten percent was marketed as filleted fish.

The following quantities of herring were cured in 1960:

Kippered fillets -	5 500 tons
Smoked herrings, bloaters and kippers -	4 700 tons
Brine-salted herring -	1 450 tons

In 1960 the canneries processed 18,850 tons of fish, including both that landed at Boulogne and that brought in from elsewhere.

The breakdown for tonnage processed:

Mackerel -	10 850 tons
Herring and pilchard caught inshore -	4 650 tons
Coal fish -	2 800 tons
Miscellaneous -	250 tons

8.4 Users

8.4.1 Suppliers

The 74 trawlers belong to 46 companies and are operated by 19 firms of the fishing industry. The 97 boats of the small-scale fishing fleet are owned either by individuals or partners. There are 97 owners who go out fishing themselves.

8.4.2 Buyers and their associations (31 December 1960)

	Number	Staff
Fish merchants and forwarders (including 76 shipowners who also sell fish or do salting or curing) -	201	1 560
Importers 1/-	25	300
Canners 2/-	10	720 (permanent employment)
Semi-canned products establishments -	8	
Salting and smoking establishments -	80	950 (regularly employed)
By-products factories -	4	88

II. LAYOUT AND FACILITIES

1. Plan and Specifications

The map of the port of Boulogne-sur-Mer (Figure III) shows the layout of the quays and the fish market. Some changes are being made or are planned to give the trawler fleet and the small-scale fishing fleet the necessary quay length so they will no longer have to dock their boats diagonally, as at present.

The port, which consists of an outer harbor of 550 ha., and an inner harbor of 35 ha., has the following installations:

A large roadstead (outer harbor protected by the Carnot breakwater on the south and west, 3,242 m long, and the northern breakwater now being completed. This will be about 2,000 m long. Foundations 1,300 m long have already been laid.

1/ Food products importers, some of whom are also fish merchants. In 1960 they imported about 15,000 tons of fresh, salted or frozen fish.

2/ Of these, seven also produce semi-canned products.

The fore-harbor, with access from the roadstead via a channel between two moles.

The Port de Pêche, (area marked Fish Harbor I on the plan), connecting directly with the fore-harbor.

The Port de Marée, (area marked Fish Harbor II), which also directly connects with the fore-harbor and stretches beyond the Marguet lock in a back-harbor formed by the Liane river between the Marguet lock and the Entente Cordiale bridge; boats are laid up here.

The wet dock, (sluices 100 by 21 m) connected with the fore-harbor by gates.

2. Facilities

2.1 Selling area

There are two covered fish halls of 4,400 m^2 and 6,520 m^2 area on either side of the fishing fleet basin, allowing 1,500 tons of fish to be handled simultaneously. Construction is in reinforced concrete.

2.2 Merchants' premises

About 80 merchants have fresh-fish shops, built of reinforced concrete near the fishing port. The rest have shops in the town.

2.3 Processors

There are four enterprises whose production is solely based on fish offals. Two of them are small-scale enterprises. The other two, set up in 1960 by the "Société d'Etudes de l'Armement à la Pêche" of Boulogne-sur-Mer, work as a co-operative, and a joint stock company (with variable capital), respectively. These two companies, which group a large number of shipowners, canners, fish-curers, and merchants, intend to run a modern fish by-products factory, with raw materials to be supplied by their members.

Total production in 1960 came to:

1,200 tons of oil
4,000 tons of fishmeal
4,000 tons of miscellaneous fertilizers

2.4 Ice plants

There are three privately-owned ice factories which, in 1960, produced about 120,000 tons of ice.

2.5 Cold storage

Apart from the many small specialized cold storages belonging to importers, shipowners or fish merchants, there are four large enterprises with a total capacity of 4,000 tons.

2.6 Discharging facilities

Quays to be used by fishing vessels are:

- in the Port de Pêche: 560 m of quays out of a total length of 970 m. This harbor is used mainly by the distant-water trawling fleet (la pêche industrielle).
- in the Port de Marée: 766 m of quays, out of which 140 m are reserved for the small-scale trawling fleet (la pêche artisanale). The total length of fisheries and non-fisheries quays is 1,960 m, the latter accommodating a cross-channel car and passenger ferry service.

Fish-dockers do the unloading. Cranes are used for unloading fish in standard boxes (packed at sea) and conveyor belts for fish in bulk.

Mechanical unloading facilities consist of 16 automatic electric cranes, 13 elevators, and 17 mobile cranes on rails.

2.7 Containers

Fish that has not been put into original boxes at sea is packed in wooden boxes when the ship is berthed. These boxes belong to the Chamber of Commerce. They are carefully washed in fresh water after use.

2.8 Fresh water and power supply

The "Compagnie des Eaux" of Boulogne-sur-Mer supplies running water.

The market halls and annexes have both electricity and gas supplies. Electricity furnished by "Electricité de France" comes to the users from transformer sub-stations.

2.9 Fuel stations

These are privately owned. Fuel oil is stored in two tanks with a total capacity of 2,750 m^3, and gas-oil in two tanks also with a total capacity of 2,750 m^3.

2.10 Repairs

Two large shipyards are used for trawler repairs. There are also three smaller ones where boats are both repaired and built.

2.11 Transport

There is a very complete, hard-surfaced road network. Several kilometers of railway lines inside the port reach the fish halls, canneries, curing and refrigeration plants. Transport is by rail and road. The boxes containing the fish are loaded on insulated freight cars and road-trucks that keep them in perfect condition.

2.12 Amenities

The Chamber of Commerce has provided a canteen for the fish dock hands on the first floor of the fish market. Here they may get meals and relax before and after their work and during breaks. A free drink-dispensing machine has also been installed.

For first aid purposes, there is a dispensary with all items of equipment and drugs likely to be needed in the event of an accident. First aid is rendered by foremen or tallymen holding the French Red Cross certificate. Due to lack of space, it has not been possible so far to provide special wash or recreation rooms.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

1.1 Docking

Docking positions along the quays are allocated by the Port Authority according to the available number of places. No priority is granted to the trawler fleet over the small-scale fleet, or vice versa.

1.2 Unloading

The sorting of fish by size and species is done either on board by the crew when the fish is caught (in this case the fish is packed in boxes supplied by the owners) or on shore by the fish dockers when being landed and packed in boxes belonging to the Chamber of Commerce. Unloading begins as soon as the boats draw alongside the quay.

1.3 Weighing

Fish packed at sea is not weighed. The fish merchants know in advance the content of the standard boxes (from 24 to 29 kg according to the commissioning firms for the trawler fleet, and 8 and 28 kg for the small-scale fishing fleet). These boxes are called "caisses d'origine". A special checker employed by the auction service checks on the weight of fish in these boxes by samples.

Fish delivered in bulk is packed in special boxes belonging to the Chamber of Commerce. These boxes are filled with 40 kg of sorted fish and marked.

Weighing is done either on scales belonging to the owners of the trawler fleet or on those of the tally-keepers of the small-scale fleet with both parties present or represented.

1.4 Display

The catch is displayed at the quayside so purchasers can judge the quality. The sellers must give the market exployees a written statement of the kind of fish, quantities and total weight placed on sale.

2. Organization of Sales

All sea products landed are sold at the Fish Market, either by auction or by private agreement. All transactions must be posted on the bulletin board in the Sales Hall. The auction is a public utility service for which the Chamber of Commerce of Boulogne holds the concession. It is administered by a Board of Directors under the Chamber of Commerce's supervision and responsibility. Auctioneering is conducted by agents appointed by the Chamber. Starting prices are usually based on the previous day's average. Minimum auction prices are set by the Board of Directors. The order of sales is determined by drawing lots; large boats and small boats alternate; fish from boats registered at Boulogne are sold first.

The Sales Hall is open from 0630 to 1300 hours and from 1400 to 1800 hours. Sales hours are set by the Board of Directors. Sales are announced by a gong.

After sale the purchaser removes the fish from the quay, the seller pointing out the respective lots. Any buyer can refuse merchandise that does not conform to the statements of the seller and is not corresponding to the sample chosen. Disputes are settled by a special commission made up of sellers and buyers. Within two hours after sales are finished, the merchandise must be removed.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

1.1 Owner of the port

The fishing port belongs to the Chamber of Commerce of Boulogne. Land installations, belonging to the Chamber are run and maintained by the Chamber itself, which lets them out for public use. Lock gates, basins, breakwaters, and other such installations, have also been built by the Chamber of Commerce, which is responsible for their maintenance under supervision of the Government enforced by the "Service des Ponts et Chaussées" (Bridges and Highways Service).

1.2 Quality control

At the port of Boulogne there is an organization which checks on the quality of the fish being landed (particularly herring), a service set up by the Shipowners' Association. Checking is done, before sales begin, by an agent of the "Institut scientifique et technique des Pêches maritimes" (Sea Fisheries Scientific and Technical Institute) appointed for this purpose. The freshness of each lot of fish is ascertained according to a spoilage index calculated on the basis of a numbered scale showing 11 features or characteristics observed by external and internal examination of the fish.

2. Finance

The port facilities were built and are maintained by the Chamber of Commerce on a basis of contracted loans, to be paid off out of tolls on landings and miscellaneous merchandise. These tolls are fixed with Government approval after consultation between the various parties involved; the shipowners, the fish merchants and other port users. Shore facilities, such as the Market Hall, are maintained by the Chamber of Commerce with funds derived from taxes for sales and purchases by or without auction or on private sales contracts.

In addition, buyers and sellers have to rent from the Fish Market the equipment necessary for their work, such as carts and boxes.

3. Personnel and Duties

In 1961 the Fish Market had on its payroll 40 persons employed in general management (including the auctioneers) and 37 workmen for upkeep and miscellaneous jobs inside the halls. The number of dockers is limited by a ministerial decree to a maximum of 500, the number depending on the amount of work and almost continuously remaining below this limit. The Fish Market employs a maximum, therefore, of 577 persons for both unloading of ships and

market operations.

4. Common Administrative Services

4.1 Agreements with users and regulations

Fish Market Bylaws (Règlement de la Halle au Poisson) give the operating conditions of this installation and the regulations for all sales operations.

4.2 Payments for sales and grant of credit

Article 19 of the Fish Market Bylaws requires the Chamber of Commerce to make available the Accounts Settlement Service.

Buyers must pay by check drawn on a local bank and made payable to the Board of Directors. A surety bond must be deposited by the purchasers for all payments. Checks are payable at the latest before noon of the third working day following the sale, except in the case of sales of salted fish or of fresh fish for salting or canning, where 30-day drafts are permitted to be given for payment at the request of the seller. Any buyer who has not settled by the appointed day is barred from further purchases.

This Service makes out bills to buyers for their purchases, and credits the sellers with the sums payable to them for their sales.

Sales made by auction and quantities sold by private agreement are subject to auctioneers' fees, partly added to the bill of the buyer, partly deducted from the sum paid out to the seller.

4.3 Market intelligence

There is no marketing intelligence service to provide information on fluctuations and trends.

5. Charges

5.1 Pilotage fees

0.178 NF per net ton (minimum 50 NF)
(30 percent reduction for boats that come to Boulogne only as a port of call).

5.2 Brokerage commissions (for fishing boats coming to this port as a port of call)

Boats entering in ballast: 0.0614 NF per net ton (minimum 40.93 NF)

Boats leaving in ballast: 0.0307 NF per net ton (minimum 20.48 NF)

5.3 Quay fees and tolls

For boats putting in at this port as a port of call: no charge.

For boats belonging to this port: two percent of the value of fish landed.

5.4 Levies on auction sales:

	Paid by seller percent	Paid by buyer percent
Tolls 1/	1.5	0.5
Market fee 1/	0.63	0.21
Auction levy	0.05	-
Dues to Central Committee	0.141	0.008
Dues to Local Committee	0.05	0.02
Dues to Nautical School	0.03	-
Dues to Seamen's Benevolent Fund	0.02	-
Dues to Guarantee Fund	0.037775	-
Dues to Fishmongers' Syndicate	-	0.214925
Local taxes	0.021225	0.007075

1/ Only these dues are payable to the Chamber of Commerce, the rest going to the State and to trade bodies.

B R E M E R H A V E N

Bremerhaven, the greatest fishing port in the Federal Republic of Germany, is serviced by a large, modern trawler fleet. Extended national fishery limits are affecting rapid fleet changes; an increasing number of semi-factory ships operate 2,000 nautical miles and more from the port. The port itself, a dock harbor, is being modernized to accommodate these fleet changes and to meet new requirements caused by increased landings of frozen fish.

Primarily, the market supplies fresh fish for the Federal Republic; it serves the processing industry to a lower degree. Except for fish frozen at sea, landings are generally auctioned. Presales are arranged in peak landing periods for quick market clearance and dispatch, but these presales are later settled at auction prices.

Since July 1960, the SAG, (Seefisch-Absatz-Gesellschaft - Seafish Marketing Company) an association of trawler companies, has landed the greater proportion of fish for auction at all German seafish markets. The SAG also fixes minimum prices for certain species.

Land (county of) Bremen owns the port facilities, but leases them to a market-managing company which is responsible for maintenance, manages turnover and auction and shares in financing turnover.

Fig. IV

FISH TERMINAL OF

BREMERHAVEN

GERMANY

BREMERHAVEN - - - FEDERAL REPUBLIC OF GERMANY

I. GENERAL

1. Location

Bremerhaven (population: 130,000) is in Land Bremen, Federal Republic of Germany, on the lower Weser, 33 miles above the mouth.

2. Type of Fishing Vessels Served

Steam and motor trawlers for deep-sea fishing and semi-factory stern trawlers bring 86 percent of the total landings.

Luggers, (mainly for herring fishing).

Cutters and coastal fishing vessels.

3. Species of Fish (figures for 1959)

Steam and motor trawlers provide: herring (26 percent), redfish (36 percent), cod (17 percent), saithe (13 percent), haddock (3 percent), other fish (5 percent). These are mainly intended for human consumption.

Cutters provide: various fishes for human consumption as well as herring and sandeel, mainly intended for reduction.

4. Fishing Areas from which Fish is Landed

Fishing grounds include: North Sea (approximate distance from the mouth of the Weser, 230 to 240 miles); Faeroes (700 miles); Iceland (1,200 miles); waters off Norway (1,200); Bear Island (1,300 miles); Barents Sea (1,400 miles); waters off Greenland (1,600 to 2,050 miles); Labrador (2,250 miles) and Newfoundland Banks (2,350 miles). There is a tendency for more distant fishing areas to become the more important ones.

5. Marketing Areas to which Fish is Shipped

Shipment is made to the whole area of the Federal Rapublic including West Berlin. There is also a considerable export.

6. Marketing Methods

Principally by auction. Fish frozen at sea is not auctioned.

7. Market Authorities and Users

7.1 Market Authority

Fischereihafen-Betriebs-Gesellschaft (FBG) (Fish Harbor Market Company, hereinafter called "the Market Company") which maintains the market and presides over the auction.

7.2 Users

Suppliers include shipowners and the Seefisch-Absatz-Gesellschaft (SAG) (Sea-fish Marketing Company) which delivers fish to the market collectively on behalf of trawler owners.

Buyers are the coastal wholesale trade, processing industry, fishmeal industry and, to a limited extent, retailers, consumers, who buy large amounts, and the fodder industry.

8. Statistics

8.1 Fishing fleet

Steam and motor trawler fleet

107 trawlers totalling 62,035 gross tons (31 December 1959). These are broken down as follows:-

Size	Below 500 GRT	500 to 700 GRT	700 to 900 GRT	Total
Number	21	72	14	107
Percentage of total	19.6	67.3	13.10	100

Luggers

These are based at other ports and make occasional landings.

Cutters and coastal fishing fleet

Motor-cutters: 27 totalling 1,003 gross tons

Coastal fishing vessels:	Powered	11
	Non-powered	59
	Total	70

8.2 Number of trips (1959)

Month	By steam and motor trawlers	By luggers	By cutters	Total
January	135	-	21	156
February	134	4	42	180
March	139	28	43	210
April	119	36	54	209
May	75	29	76	180
June	80	22	133	235
July	120	-	132	252
August	153	-	155	308
September	165	-	162	327
October	162	-	78	240
November	146	-	62	208
December	148	-	39	187
Annual Total	1 576	119	997	2 692

During the warm season, particularly in May and June, when fish consumption decreases, repairs, maintenance and re-equipping of the steam and motor trawlers are undertaken.

8.3 Quantities and value of landings (1959)

	Steam and motor trawlers		Luggers 1/		Cutters	
	Quantities	Value	Quantities	Value	Quantities	Value
January	17 963	9 253	-	-	170.2	108.6
February	16 305	7 681	246.7 (71.5)	94.4 (29.6)	-	233.1
March	18 889	9 645	1 249.1 (554.9)	506.2 (269.1)	553.3	196.3
April	19 083	7 446	2 090.6 (1 121.8)	693.6 (442.5)	554.2	183.2
May	12 177	5 425	1 857.2 (1 222.7)	660.0 (504.2)	1 394.5	284.1
June	12 667	6 372	1 309.1 (1 118.6)	543.2 (468.7)	3 893.1	583.3
July	18 592	6 989	-	-	3 514.1	592.7
August	23 847	9 700	-	-	4 439.2	798.9
September	25 210	10 102	-	-	5 539.2	986.9
October	20 033	10 563	-	-	1 962.7	425.0
November	15 394	10 531	-	-	395.7	161.0
December	16 959	8 937	-	-	210.2	161.0
Annual Total	217 119	102 644	6 752.7 (4 089.5)	2 497.4 (1 714.1)	23 632.7	4 786.2

Quantities: metric tons
Value: 1,000 DM.

1/ Figures in brackets refer to herring.

Landings by the steam and motor trawler fleet constitute about 86 percent of the total landings.

Quantity and value of landings by steam and motor trawlers show a substantially similar pattern in the number of landings. Lowest months are May and June, the highest, during the trawl herring season, starting in July.

8.4 Disposition of landings

Disposition of landings by steam and motor trawlers (1959)

Month	For fresh human consumption	For processing (mainly herring)	For foddering and reduction	Total
	metric tons			
January	14 324	2 461	1 178	17 963
February	14 426	526	1 353	16 305
March	16 168	1 636	1 085	18 889
April	12 989	680	5 414	19 083
May	10 129	175	1 873	12 177
June	11 102	649	916	12 667
July	8 381	4 693	5 518	18 592
August	9 226	9 448	5 174	23 847
September	9 880	9 281	6 050	25 211
October	10 699	7 235	2 099	20 033
November	11 193	3 448	753	15 394
December	11 121	4 390	1 468	16 959
Annual Total	139 638	44 601	32 881	217 120
Percentage	64.5	20.5	15.0	100

Statistics for disposition of the landings by luggers, cutters and coastal fishing fleet are not available, but their weight in the total landing is not significant.

8.5 Users

8.5.1 Buyer turnover

Buyers are classified and their turnover in 1959 is given as follows to indicate their respective importance in the market transactions.

Buyers and their turnover (1959)

Wholesale and Processing firms	Number of firms	Turnover	Percentage of total turnover
Bremerhaven firms			
Size of turnover (DM)			
1 000 000 and more	18	68 617 405.60	60.19
500 000 to 1 000 000	22	13 962 485.77	12.25
300 000 to 500 000	23	8 876 147.97	7.79
150 000 to 300 000	25	5 225 095.72	4.58
50 000 to 150 000	42	4 337 127.28	3.80
less than 50 000	21	375 298.42	0.33
	151	101 393 560.76	88.94
Firms from outside Bremerhaven	31	4 233 152.46	3.71
	182	105 626 713.22	92.65
Trawler Companies		6 471.80	0.01
Retailers		792 381.53	0.70
Fishmeal plants		7 567 833.23	6.64
Total		113 993 399.78	100.00

Most wholesale firms are concurrently engaged in processing and therefore it is not possible to separate these two activities. As may be seen from the above, the turnover of 18 Bremerhaven wholesale and processing firms, i.e. 10 percent of the local and other firms constitutes 60 percent of the total turnover. The leading organization of buyers is the "Fischwirtschaftliche Vereinigung des Seefischmarktes Bremerhaven e.V."

8.5.2 Trawler ownership and organization

On 31 December 1959, 107 steam and motor trawlers which landed their catch at Bremerhaven belonged to 17 companies. Of these, 2 big companies owned 20 and 23 trawlers respectively, the remaining being medium-sized enterprises owning up to 10 trawlers each.

These medium-sized companies were, with one exception, members of "Dampfseefischerei-Verein-Unterweser e.V." Apart from this association, common interests of the entire steam and motor trawler fleets of the four fish markets in the Federal Rapublic, i.e. Bremerhaven, Cuxhaven, Hamburg and Kiel, are represented by the "Verband der Deutschen Hochseefischereien e.V. Bremerhaven", members of which are all trawler companies, including the big ones.

II. LAYOUT AND FACILITIES

1. Plan and Specifications

Figure IV shows the over-all plan and layout of the harbor and fish market.

2. Facilities

2.1 Selling area

There are three auction halls:

Hall X	length, 370 m; area, 10,080 m^2; auction floor, 4,900 m^2
Hall XI	length, 320 m; area 8,960 m^2; auction floor 4,480 m^2
Hall XV	length, 180 m; area 5,740 m^2 auction floor, 2,870 m^2

The total auction area (12,250 m^2) enables the layout of about 36,000 cwt of fish.

Hall XV is the most recent and was built in 1950. It is made of steel-reinforced concrete in skeleton construction and clinker-coated. The concrete roof is protected against sunlight by glass wool.

2.2 Packing halls

There are 12 packing halls with 204 compartments for wholesalers. Total area is 45,300 m^2.

The halls are of steel-reinforced concrete in skeleton construction manner and are clinker-faced.

2.3 Processors

There are six firms engaged in deep freezing, the capacity being 157.5 metric tons per day. Deep freezing storage capacity of these firms amounts to 6,650 tons (7,600 m^2).

There are 12 herring salting sheds with a total area of 7,000 m^2.

There are seven fish-meal plants, all owned by private firms.

2.4 Ice plants

There are four ice plants owned by private firms.

2.5 Discharging facilities

Tides. A double lock makes the fishing harbor independent of the tide. Differences in the water level within the harbor are as little as 150 cm, even in bad weather.

Quays. The length of the quays along the auction halls X, XI and XV is about 1,000 m. Twelve to 13 trawlers can berth alongside at the same time.

Unloading. Discharging boards and other facilities are available. Plastic containers are available from the Market Administration in which fish is brought from the fishroom by means of windlasses over pulleys fixed at the stay-rope of the trawler. The containers are drawn to the quay over the discharging boards. Weighing ensues in the auction halls. Conveyor belts are available for unloading by modern stern-trawlers.

2.6 Containers

For auctioning purposes, the market administration keeps about 50,000 wooden boxes which contain 50 to 60 kg of fish each.

Immediately after purchase, the boxes are removed by fork-lifts or by conveyors furnished by forwarding firms. The boxes are cleaned with a special cleaning machine capable of washing about 7,000 boxes during an 8-hour shift. The machine works in two shifts a day. Washing is done with cold water under high pressure with some disinfectant added. There is an addititional cleaning device in each auction hall for use when the number of boxes exceeds the capacity of the machine.

2.7 Bunkering stations for coal and fuel

These are operated by private firms.

2.8 Repair shops

These are also run by private firms.

2.9 Transport

Roads: 210,000 m^2 with solid paving, 32,000 m^2 of fastened foot-paths.

Rail: railway network in the port area has a total length of 40 km. In the fishing port area the German Federal Railway maintains a station for dispatching fish with 11 loading-ramps.

2.10 Fresh water and power supply

Water is furnished by the local water works, Bremerhaven, to the halls and other rooms.

The halls and other rooms are supplied with electricity and partly with gas. The electricity is furnished by the Electric Supply Company, Hanover-Nord, the current being transformed by transformation stations controlled by the Market Company.

2.11 Amenities

Shower-bath, recreation rooms and meal-warming installations are available to Market Company employees. There is a first aid service day and night. Two fire-brigade stations are kept by the municipality next to the fishing port area.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

Fishing vessels are assigned to berthing places by the Market Company according to "Allgemeine Benutzungs-und Geschäftsbedingungen" (general market regulations) established by the Market Company.

Fish in holds is sorted by dock laborers into sizes and sorts according to the assorting list agreed upon between the "Verband der deutschen Hochseefischereien e.V." and the Market Companies of the Federal Republic.

Discharging the fishing vessels begins on the eve of the marketing day, generally at 2000 hours.

The fish landed is weighed by weighers into equal parts and, being separated by species, sorts and quality, is laid out for auction in single lots. Landing and layout of the fish is done by Market Company workmen. Before the auction begins, all landings are controlled by the sanitary police according to regulations. Fish inadequate for human consumption is excluded.

2. Organization of Sales

Auction: The auction is carried out by Market Company employees in the early morning hours, in compliance with the "General Market Regulations. Usually auction takes place in order of arrival of vessels.

Cutters and coastal fishing vessels are regarded as giving their order for auction by berthing alongside the quay.

Steam and motor trawlers commission their catch to the Marketing Company, either for immediate auction or for storage. However, customers are entitled to countermand their orders.

Herring is sold by weight or box. Other fish is generally sold by weight.

Auction bids are made in Dpfg 1/ per ½ kg. The auction is an ascending one and prices must be raised by at least ¼ Dpfg. The fish is knocked down to the highest bidder.

For steam and motor trawlers, a special regulation has been established since 1 September 1959. They have formed the "Seefisch-Absatz Gesellschaft m.b.H" (SAG) (Seafish Marketing Company) which takes over all fish of trawlers for auction from time of landing in each of the four seafish markets (Bremerhaven, Hamburg, Cuxhaven and Kiel). Fish adequate for human consumption becomes the charge of the Seafish Marketing Company in order to have the catches sold by the Market Company. The SAG, in co-operation with the association of the buyers, classifies fresh fish according to the judgment of independent experts. This judgment is obligatory to sellers and buyers and complaints are regularly decided upon by the General Market Regulations of the Market Company. Since 15 July 1960, the SAG has been fixing minumum auction prices, which generally do not cover the costs. At present, there are 24 price positions according to different species and sizes of fish. Any abuse of price positions are subject to control of the Bundeskartellamt (Federal Cartel Office) under Article 104 of the "Gesetz gegen Wettbewerbsbeschränkungen" (Law against restrictions of competition).

In connection with the minimum prices there is an arrangement between the SAG and trawler companies for compensation for unsold fish. There is also a catch agreement within the trawler companies in order to adapt the production to the market situation.

Presales: Occasionally, volume of landings, necessity for quick processing and immediate dispatch makes "presale" necessary. The prices are fixed by the Market Company, with assistance from the trawler company concerned and the SAG, on the basis of the auction prices of similar merchandise on the day of delivery. Presales must not exceed 25 percent of the total species and sorts to be sold and, if necessary, the quantities can be reduced.

Removal and delivery of fish sold: Fish sold at auction must be collected and removed from the market immediately. Merchandise not removed before 1800 hours of the auction day remains there at the buyer's risk. "Wachdienst für den Fishereihafen G.m.b.H." (Surveying Service of the Fishing Port, Ltd.) controls handling of fish from the time of its landing to its dispatch.

1/ 100 pfennig = 1 Deutschmark; 4.? DM = 1 US $

Fish sold by auction is delivered to buyers in boxes by forwarding firms in Bremerhaven. Emptied boxes are put in the street in front of the stores of the buyers and they are collected and brought to the cleaning machine by the Market Company.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

Ownership of the port: The fishing port of Bremerhaven is owned by the Land Bremen-Freie Hansestadt Bremen (Free Hanseatic town of Bremen). A special office, the Hansestadt Bremische Amt in Bremerhaven, is responsible for carrying out new construction and enlargement of land installations.

Land installations: These are administered and maintained by the Market Company, i.e. the Fischereihafen-Betriebs-Gesellschaft m.b.H. Bremerhaven (FBG), which is a governmental company set up according to the Civil Law. There is a lease contract with respect to these installations between the Land Bremen and the Market Company.

Water installations: Locks, docks, dikes and such physical installations are administered and maintained by the Land Bremen and the Hansestadt Bremische Amt in Bremerhaven is in charge of these duties. Pilot and tugboat services are not performed by the Market Company but by private firms on demand by trawler companies.

Quality control: This is conducted by the officials of the governmental sanitary police.

2. Finance

The costs of harbor construction and maintenance of the water installations are borne by the Land Bremen.

The Market Company bears the costs of fish handling facilities and of maintenance of the land installations according to the lease. The Market Company receives the following payments according to the tariff which is an integral part of the "Allgemeine Benutzungs-und Geschäftsbedingungen" (General Market Regulations).

From sellers: Landing charges; auction charges; marketing commission (for fish not sold by the Company); wharfage (for fish landed and sold by the producer himself).

From buyers: Storage charges (for fish not removed in due time); general marketing charges; charges for using boxes.

Penalties: Penalties include charges for boxes returned too late, damaged or lost.

3. Personnel and Duties

The following people were engaged permanently by the Market Company as of August 1960:

66 employees for general administration
323 dock-hands for unloading
97 hall-workers for auction
117 artisans and workers for general purposes

Total: 603 persons

Apart from the above, in order to meet the fluctuations in landings, 20 to 60 workers are employed on a daily temporary basis for unloading fish.

4. Common Administrative Services

Payments for sales and grant of credit

The Market Company issues invoices for sales. Invoices are sent to sellers (also to the Seafish Marketing Company when it acts for trawler companies) and buyers. Proceeds from sales are directly transferred to trawler companies, even when the Seafish Marketing Company handles the fish.

Although payment for fish purchased falls due immediately, in principle, the Market Company may agree upon special payment conditions, against securities, with individual buyers, usually deferring the payments by nine days.

The Market Company may also grant credit in case of seasonal fluctuations of landings which make storing or deep freezing fish necessary.

Market intelligence

The "Wachdienst für den Fishereihafen G.m.b.H." is in charge of issuing market news for all customers of the market and for the interested circles in other seafish markets. The news includes landings and prices in all markets of the Federal Republic. The expenses for issuing the news are met by the customers of the market through the Market Company.

Promotion of fish consumption

There is a special local publicity service, the "Werbedienst des Seefischmarktes Bremerhaven e.V.". The costs of these publicity activities are, besides voluntary contributions by shipowners, levied by the Market Company in the form of additional charges on fish landed and sold by auction.

Besides this local fish publicity service, there are "Deutsche Fischwerbung e.V." and "Förderungsdienst für den Fischabsatz G.m.b.H." which render service

to all seafish ports. These organizations are financed, apart from the voluntary contribution of the trawler companies, by certain legal levies for the promotion of fish consumption.

5. Agreements with Users and Regulations

"Allgemeine Benutzungs-und Geschäftsbedingungen und Entgelt-Tariff" of the "Fischereihafen-Betriebs-Gesellschaft m.b.H., Bremerhaven" prescribes general conditions for the users of the Market Company. Main points of these conditions have been mentioned under the respective items.

6. Charges

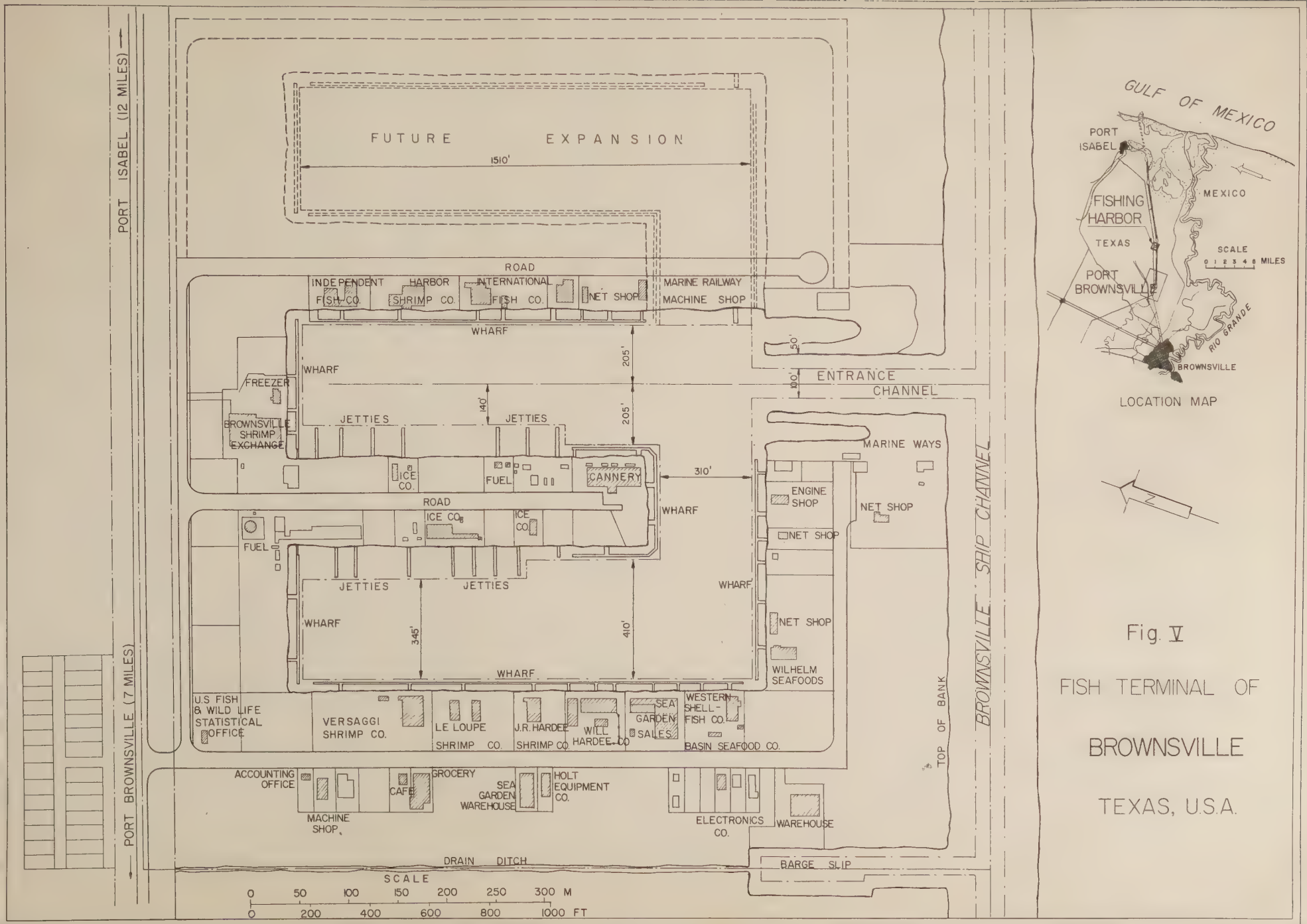
Mention is made here of the charges for auction of fish which is calculated on a percentage basis of the proceeds as follows:

Seafish, freshwater fish, and other sea animals

Those landed by German fishing vessels:	
Steam and motor trawlers	4 percent
Cutters	4¼ percent
Herrings for processing purposes (luggers, cutters)	4 percent
Those landed by foreign vessels	4½ percent
Those sent by land as well as freshwater fish	6 percent
Those sent otherwise:	
Those auctioned in the Bremerhaven market once	4 percent
Those not auctioned yet	6 percent

B R O W N S V I L L E

The Market was established in 1953 and built by a public body, the Brownsville Navigation District. Turnover is based on shrimp catches from the Gulf of Mexico. The local processing enterprises are partly supplied by about 300 shrimp trawlers, whose home port is Brownsville, and partly by imports, almost exclusively from Mexico. Landings and imports total about 12,000 tons a year. The processing industry wholly or partly owns about 85 percent of the shrimp trawlers. Normally, the landed shrimp are supplied directly to the processing or packing industry. This, and the fact that there are almost no other fish landed, has made it possible for the market to dispense with display and inspection halls, special sales procedures and other usual market features.



LOCATION MAP

Fig. V

FISH TERMINAL OF

BROWNSVILLE

TEXAS, U.S.A.

BROWNSVILLE - - - UNITED STATES OF AMERICA

I. GENERAL

1. Location

Brownsville (1950 population: 36,066) is the extreme southwest point of the state of Texas on the Gulf of Mexico. It is the commercial center of the lower Rio Grande valley. It borders on Mexico and includes a deep-water port for sea-going vessels and a shrimp basin for commercial fishing operations.

2. Types of Fishing Vessels Served

Shrimp boats; practically all shrimp vessels are trawlers using two trawls at the same time.

3. Species of Fish

Although small quantities of fin fish are landed by the shrimp boats, the primary catch is shrimp and the facilities and services provided are designed exclusively for handling shrimp.

4. Fishing Areas from which Fish is Landed

Main shrimp fishing grounds are the Gulf of Mexico off the Texas coast out to 40 fathoms, the Campêche Banks area and the fishing grounds off the Mexican coast between these two areas.

The cruising range of the vessels varies according to engine type and size. The duration of the fishing voyages ranges from one week to two months, depending upon the area fished. Vessels at Campêche area are supplied by other vessels from Brownsville, so that they may remain on longer voyages.

5. Marketing Areas to which Shrimp are Shipped

Shrimp are shipped from Brownsville mainly to large consumption centers in the Midwest and eastern United States.

6. Marketing Methods

Eighty-five percent of the vessels are "controlled" boats, which deliver the catches at the plants of the boat owners, mortgagees or other parties who have a financial interest in the boats.

7. Market Authorities and Users

7.1 Market authority

The Brownsville Navigation District (public body).

7.2 Users

Shrimp boat operators (mostly "controlled" boats); import trade (refrigerator vessels); processing plants; local buyers of fin fish to a limited extent.

8. Statistics

When the Brownsville Shrimp Basin opened in 1953, occupancy was 70 percent. In 1958 it was 100 percent and in 1961, 95 percent.

8.1 Fishing fleet

Approximately 300 shrimp trawlers operate from the Basin. The vessels mainly range from 65 to 75 ft in length.

8.2 Number of trips

Number of landings on a year-round basis average approximately 20 per day. This varies with seasonal or weather conditions and may fluctuate from one to one hundred. Shrimp are landed at Brownsville throughout the year, but the main shrimp season and the greatest number of landings on the Texas coast occur from June to October.

8.3 Quantities and value of landings

Annual landings average about ten million pounds (4,500 metric tons) of shrimp, plus a negligible quantity of fin fish.

Annual value of landings is approximately six million dollars (ex-vessel price).

In 1961, 16.5 million pounds (7,500 metric tons) of headless frozen shrimp were imported at Brownsville, plus 89,000 pounds (40 metric tons) of breaded frozen shrimp. Practically all imports come from Mexico.

8.4 Disposition of landings

Shrimp is not sold in the fresh state in any commercial quantity. Some 70 percent of the total landings is processed (breaded, individually quick-frozen, peeled and deveined, or otherwise processed) and about 30 percent is packed in the headless green state.

8.5 Users

There are 13 shrimp processing plants operating in the port, all of which either wholly or partly own five or more vessels.

In addition to these fleet owners, there are some 40 or 50 individual vessel owners who unload their catch at these plants. Most of these vessel owners are members of the Brownsville Shrimp Association and the Texas Shrimp Association. The latter is one of the Association members of the Shrimp Association of the Americas.

II. LAYOUT AND FACILITIES

1. Plan and Specifications

Figure V shows the layout of the Fishing Harbor, indicating a location map.

2. Facilities

The Brownsville Shrimp Basin serves as a terminal base of operations and as an unloading point for a fleet of shrimp vessels. Its purpose is to provide shore facilities for the operation of this fleet, unloading facilities for discharging and a market for the sale of their catches. It provides 7,500 feet (2,300 m) of tie up space.

There are three ice plants in the docks area and one cold storage plant, operated by private firms. Additional cold storage facilities are available some seven miles away in the city of Brownsville.

Unloading equipment consists of conveyors, washing and grading device for handling, washing, and grading the shrimp at the various unloading points. This equipment is run by private firms.

Containers used are 100-pound (45 kg) wooden boxes and 5-pound (2.25 kg) and smaller-sized waxed cartons.

Within the plants, shrimp are handled by conveyors and in some cases by fork-lift equipment. Fresh water is provided from the city's fresh water supply, and is delivered to the Shrimp Basin by a special four-mile (6.5 km) pipe line built for this purpose. In addition, a reservoir is provided for additional or emergency use. Power is supplied by the local supply services, the Central Power and Light Company. Although no trains run directly to the Shrimp Basin, rail facilities are available some three miles away at the main terminal of the Port of Brownsville. Supplies and fishery products are primarily forwarded by truck, while a certain portion of imported shrimps is delivered in refrigerator vessels landed directly at the Shrimp Basin.

No first aid or recreational facilities are provided. One restaurant for public use and one company-operated restaurant are provided for the employees of the cold storage plant.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

Fifteen piers are provided for berthing and discharging cargoes. In addition to these there are bulkhead berthings serving the same purpose. No display of catches is provided for; inspections of the catches are made by company personnel continuously during unloading. Bureau of Commercial Fisheries inspectors do not inspect shrimp during unloading.

2. Organization of Sales

There is no auction. The day-to-day market prices for the various sizes and colors of shrimp are fixed by the buyers and agreed to by the vessel crews. Although as mentioned above, eighty-five percent of the vessels using the port are "controlled" boats, prices are not agreed upon by boat operators and buyers before sale. General conditions of supply and demand, national marketing conditions, and prevailing prices and landings at other ports are factors which affect day-to-day prices at this port. Prices paid are those prevailing on the day of landing.

Few fin fish are handled except for some red snapper which shrimp trawlers catch during slack periods of shrimp fishing on certain voyages. These are mostly handled by local buyers on a daily price basis.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

The Brownsville Shrimp Basin is owned and run by a public body called Brownsville Navigation District. This body is composed of three commissioners elected by the freeholders of the geographical area comprising the Brownsville Navigation District. The Navigation District owns all of the waterfront real estate and docks, and leases these to individual lessees. These lessees include the 13 shrimp companies mentioned above, the owners of two marine railways 1/ and several engine and electronics facilities, ship chandlers, restaurants, ice companies, and similar companies. The buildings have been erected and are owned by the lessees mentioned. The Navigation District keeps the Basin dredged to a depth of 10 to 12 feet (3 to 3.6 m) and is also responsible for the maintenance of the roads and docks.

There is only a voluntary inspection referring to the quality of products. Mandatory or enforced regulations apply only where the question arises as to fitness of products for human consumption; this control is carried out by the authority of the United States Food and Drug Administration.

2. Finance

The Brownsville Shrimp Basin was constructed in 1953 at a cost of $750,000. Approximately half the initial capital was spent on dredging and dock construction. The other half was spent for installations. One expensive installation item was the four-mile (6.5 km) extension of water mains from the city system to the Basin. Initial construction costs were financed by a bond issue, the retirement of which is covered by the receipts from charges and other fees.

3. Common Administrative Services

Maintenance service is a duty of the Brownsville Navigation District. A night guard service is provided to control entry and exit at night. All other services (unloading, grading, processing, packing, distribution and the like) are provided by the individual firms operating in and outside their own establishments.

United States Government services operate under the Department of the Interior's Bureau of Commercial Fisheries. There is a port agent for the Branch of Statistics and an inspector of the Bureau's inspection service assigned to one of the processing plants. This inspection under the Bureau of Commercial Fisheries' voluntary inspection program is intended for quality control of products mentioned above. It is subscribed to voluntarily by the plant

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1/ The marine railway as used here is not equal to a railroad line used by trains, but is a slipping device upon which vessels are hauled out of the water into a boatyard.

operator who himself bears the costs of this service.

Although no common accounting or other services are provided, the Bureau of Commercial Fisheries statistical office issues a daily report of landings and market prices. This report is made available to all interested circles at the Shrimp Basin and is included in the daily news report issued for the Gulf and South Atlantic region by the Bureau's office at New Orleans, Louisiana.

4. Charges

The following charges are raised:

(1) Rental of land and docks at $1 per frontage foot ($3.3 per meter) per month.

(2) Wharfage fees as follows: $0.15 per hundredweight ($3.0 per metric ton) for shrimp landed; $0.05 per barrel for fuel delivered; $0.20 per ton for ice delivered.

(3) Charges to the marine railways for lease equivalent to one-half of the haul-out fee (for hauling the vessel out of the water into a boatyard). The haul-out fee is usually set on a price per foot of vessel length.

Leases are normally for a five-year period that can, with four options, be renewed at the lessee's option.

CHIKURA

Chikura fishing port is administered by the Chiba Prefectural Government. It is a medium type of port, but is not a base for deep-sea fishing with tuna boats and large trawlers. Chikura fishing port has two fish markets, Hedate and Chikura, both managed by fishermen's co-operatives. Since the Hedate Fish Market predominates, the description refers only to it.

The Hedate Fish Market is supplied both by Co-operative boats and craft from other localities. The greater part of the catches of the Hedate boats are not landed at the home port, but at other ports more favorably located according to seasonal fish migrations and distance from fishing grounds.

Most landings go fresh to the large consuming centers. Landings are usually auctioned by the Co-operative in order of arrival. Floor-prices may be fixed by single fishermen; buyers must be registered with the Co-operative. The Co-operative may also buy in the auction whenever it thinks this appropriate. The Co-operative also freezes, processes and sells fish and fish products to wholesalers and to other purchasers by negotiation. To some extent, shipments are made by the Co-operative on a consignment basis to distant large consuming centers, in co-operation with prefectural and national federations of fishermen's co-operatives.

The Hedate Fishermen's Co-operative Association is a multi-purpose society dealing also with supply of fishing requisites, credit, and various welfare activities.

Fig. VI

FISH TERMINAL OF

CHIKURA

JAPAN

CHIKURA - - - - - JAPAN

(Chikura Fishing Port and Wholesale Fish Market of Hedate Fishermen's Co-operative 1/)

I. GENERAL

1. Location

The town of Chikura, (1955 population: 19,188) in Chiba Prefecture, is on the southeastern coast of Boso Peninsula in the central part of Honshu, the main island of Japan, near Tokyo and Yokohama.

2. Types of Fishing Vessels served

Powered and non-powered wooden boats. Those over 20 tons are of western type, while the smaller boats are of local type.

The Fishing Port of Chikura is intended for offshore fishing boats, but is not used as a fishing base for deep-sea fishing boats such as tuna boats and large trawlers.

3. Species of Fish

The landings of mackerel caught by pole and line fishing on board 20 to 50 ton-class boats account for about 90 percent of the total landings.

Other species are: swordfish, horse-mackerel, skipjack, saury, tuna, dolphin and others.

1/ The port of Chikura was formerly divided into two: i.e. Chikura and Hedate Port with their fish markets, but with the consolidation of smaller fishing ports made in 1949 by the Prefectural Government, they are now combined into one port, named Fishing Port of Chikura; with regard to fish markets and land facilities as well as their operating bodies, however, no alteration has been made; there are still two separate fish markets: Hedate and Chikura. Landings at the Hedate Wholesale Market are twice as large as those at the Chikura Wholesale Market. For the purpose of this study, only the Hedate Wholesale Fish Market is dealt with, unless indicated otherwise.

4. Fishing Areas from which Fish is Landed

There are very rich fishing grounds in the coastal and offshore waters. The fishing grounds differ according to seasons. The boats of 20 to 50 ton-class fish mackerel from January to March in the eastern waters of Boso Peninsula and from April to July in the southern waters of the Peninsula and in coastal waters around the Izu Islands. The same boats also operate a sword-fish harpoon fishery in these fishing grounds, but in other seasons. From July to August, repairs and maintenance are done. Then from September to December the 20 to 50 ton boats leave the port and fish saury or mackerel, most of the catch being landed at other ports. During this time the port and market are quiet.

5. Marketing Areas to which Fish is Shipped

Most of the landings are shipped as fresh fish to large consuming centers such as Tokyo, Osaka and Nagoya. Processed products are shipped to farming villages in the western districts. Abalone and other shellfish are mostly shipped to the Tokyo market.

6. Marketing Methods

Fish catches are sold by auction as a rule, while a part of the catches is shipped by the Co-operative on a consignment basis. Buyers must be registered with the Fishermen's Co-operative. The Co-operative purchases agar-agar and other seaweeds directly from their producers (members) and processes them.

7. Market Authorities and Users

7.1 Market authority

Hedate Fishermen's Co-operative.

7.2 Users

Chief suppliers are the members of the Hedate Fishermen's Co-operative who utilize the fishing port. Recently there has been a tendency towards increased landings by boats from other centers. This is perhaps due to the latest improvements and expansion made in the facilities of the port and the general enlargement of coastal and offshore fishing boats in Japan.

Chief buyers are the Co-operative and buyers registered with the Co-operative.

8. Statistics

8.1 Fishing fleet (end of September 1961)

Powered boats

Size (GRT)	0 to 5	5 to 10	10 to 20	20 to 30	30 to 40	40 to 50	over 50	Total
No. of vessels	29	0	2	30	15	2	4	82
Per-centage	35.3	-	2.5	36.5	18.3	2.5	4.9	100
Total GRT	35.27	-	39.41	884.13	593.08	99.38	269.61	1 920.88
Total horse-power	193	-	195	4 480	2 940	390	810	9 008

Notes: (1) Those over 20 tons are all equipped with Diesel engines, wireless, radio direction finders, and fish finders.

(2) Besides, five boats have Loran and one boat has refrigeration facilities.

(3) The engines of those under five tons are hot-bulb or electric ignition engines.

Non-powered boats

Size	Under 1 ton
Number of vessels	25
Total of tons	12.97 tons

8.2 Number of trips (April 1960 to March 1961)

Months	Number of trips	By fishing boats	
		Boats of the Co-operative	Boats of outer areas
April	303	197	106
May	694	546	148
June	294	202	92
July	180	71	109
August	148	67	81
September	142	32	110
October	100	29	71
November	132	63	69
December	220	179	41
January	75	58	17
February	114	73	41
March	349	108	241
Total	2 751	1 625	1 126

Notes: (1) The largest number of boats landing within a day during the peak season is about 70.

(2) Boats land once a day.

8.3 Quantities and value of landings (April 1960 to March 1961)

8.3.1 By months and average prices

Months	Quantity (metric tons)	Value (1 000 Yen 1/)	Average price (Yen per kg)
April	1 547	40 981	26.5
May	3 665	75 975	20.7
June	873	25 221	28.9
July	481	18 896	39.3
August	82	2 719	33.2
September	178	5 911	33.2
October	15	732	48.8
November	72	3 010	41.8
December	326	18 811	57.7

Months	Quantity (metric tons)	Value (1 000 Yen 1/)	Average price (Yen per kg)
January	239	13 456	56.3
February	1 005	44 710	44.5
March	756	46 519	61.5
Total	9 239	296.941 (US $ 824 000)	32.1

8.3.2 By species and average prices

Species	Quantity (metric tons)	Value (1 000 Yen 1/)	Average price (Yen per kg)
Mackerel	8 944	269 649	30.1
Horse mackerel	157	5 836	37.2
Saury	45	2 263	50.3
Skipjack	34	3 168	93.2
Swordfish	32	10 650	332.8

Besides the landings of seaweeds were:

	Quantity (metric tons)	Value (1 000 Yen 1/)	Average price (Yen per kg)
Seaweed	112	2 395	21.4

1/ 360 Yen = 1 US $

8.3.3 By boats of the Co-operative and by those of outer areas

	Number of boats	Quantity (metric tons)	Value (1 000 Yen 1/)
Boats of the Co-operative	70	5 936	177 818
Boats of the Co-operative (woman members 2/)	40	6	4 065
Boats of outer areas	267	3 297	115 058
Total	377	9 239	296 941

1/ 360 Yen = 1 US $
2/ Landings of abalone by fisherwomen

8.4 Disposition of landings (April 1960 to March 1961)

As fresh fish	4 893 metric tons
For processing	4 342 metric tons
Total	9 235 metric tons

8.5 Users

8.5.1 Suppliers

Number of vessel owners (as of end September 1961)

Types of owners	Types of boats	Number of owners	Number of vessels
Individuals	Non-powered	25	25
	Powered boats under 10 GRT	25	29
	Powered boats over 10 GRT	36	48
Corporations	Powered boats over 10 GRT	2	5
Total		88	107

8.5.2 Buyers

Buyers by sales value (April 1960 to March 1961)

Sales value	Number of buyers	Sales in 1.000 Yen
Below 1 million yen	19	8 349
1 to 5 million yen	16	37 850
5 to 10 million yen	5	39 363
10 to 20 million yen	4	58 825
30 million yen and over	2	88 715
Co-operative (Market)	-	63 839
Total	46	296 941

Registered buyers and tender deposit for security

Tender bonds	Number of buyers
100 000 Yen	9
50 000 Yen	18
10 000 Yen	19
Total 1 990 000 Yen	46

Number of buyers by areas

Areas	Number
Hedate	23
Adjacent places	21
Others	2
Total	46

Types of buyers

Types	Number	Specifications
Wholesalers	10	Engaged solely in wholesaling - 1 Partly engaged in freezing - 2 Partly engaged in processing - 6 Partly engaged in retailing - 1
Processors	25	Engaged solely in processing - 22 Packers - 1 Partly engaged in retailing - 2
Retailers	11	Store-keepers - 4 Pedlars - 7

II. LAYOUT AND FACILITIES

1. Plan and specifications

Figure VI shows the over-all plan and layout of the Hedate part of Chikura Fishing Port, and Hedate Wholesale Fish Market.

2. Facilities

2.1 Market area

The landing and marketing of fish is done in two separate places, i.e. Natogawa Market and Tsukishima Market. The area of the former is 9,400 m^2; of the latter, 3,875 m^2; total, 13,275 m^2. This area is Government-owned and has quays and landing facilities. In addition, the market premises cover 7,125 m^2 of Government-owned land for ship repairing and other facilities, and 19,950 m^2 of land owned by the Co-operative, including road area of 600 x 10 m. The total area used for the market is 40,350 m^2.

2.2 Processors

As many as 31 processing firms are supplied with fish from the Co-operative. Each is provided with a processing plant of 70 to 150 m^2.

The processed goods include boiled and dried mackerel, salted mackerel, and opened and dried saury, mackerel and scad. The processing capacity per day of a plant, though it varies according to fish species, is about 1,000 to 5,000 kg, but most are below 2,000 kg.

2.3 Ice plants

There are two plants operated by the Co-operative.

Plants	Ice-making Tons/day	Freezing Tons/day	Storage of ice (tons)	Cold storage (tons)
Hedate No. 1	10	15	320	300
Hedate No. 2	10	10	180	260
Total	20	25	500	560

2.4 Containers

The fish markets keep about 10,000 wooden boxes, each 90 x 45 x 18 cm and each containing about 40 kg of fish.

2.5 Internal transport equipment

Ten conveyors and barrows are used to transport landed fish, in addition to the trucks which can freely enter the landing places. There are seven trucks operated by the Co-operative (from one to six tons). Transport of necessary fishing materials and transport of catches into the market is free of charge.

2.6 Transport

There is no railway transport of importance. Since the market is very near Tokyo and its satellite cities, Japan's largest consuming center, the greatest part of landed fish and products are shipped there by truck. Long-distance transport is also by truck.

Sea transportation (mainly made by a carrier of 15-ton loading capacity, belonging to the Co-operative) is not great. The proportions of various types of transport are:

Truck:	70 percent
Freight car:	20 percent
Boat:	10 percent

Most fresh fish is transported to consumption centers by truck and boat. Most frozen and salted products are transported by rail.

2.7 Fresh water supply

Fresh water for fishing boats and markets is supplied from river sources in the mountains by 15 large faucets. Sea water is provided for washing fish and cleaning the market.

2.8 Amenities

Market employees are provided with meals from the Co-operative. Bathing and washing facilities are available to market personnel and fishing boat crews. Sick or injured people are treated at the hospital run by the Co-operative, which also serves health needs of members.

A fishermen's hall is provided for the use of crews. Waiting rooms and recreation facilities are attached to the market for the use of buyers. Employees receive a paid holiday trip once a year by way of rewarding their services. Buyers are also furnished with subsidiary money for their trips. Entertainments such as cinemas and plays are provided several times a year under the auspices of the Co-operative.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

1.1 Methods of berthing

In slack seasons, fishing boats may freely be berthed, but in the peak season, when fish catches are landed in great quantities, a great number of boats must be berthed in a group with their bows ahead, which makes it feasible to berth 30 to 50 vessels of the 30 ton class at one time. After discharging the catches and loading necessary supplies, the boats move to other moorings where they are moored at buoys or anchored.

1.2 Landing of catches and other pre-sale arrangements

The announcement of fish landing is made by siren to all fresh fish buyers and processors.

The catches held in fish holds with ice and water are taken out by scoop nets, put into baskets, and then landed.

Fishermen sort the species which need sorting into three groups; large medium and small. The fish put into containers, kept by the market, are weighed by market operators.

Market personnel arrange placards to show boat names, fish species, sizes and quantities. The containers are also labelled with the name of fishing boat, species and size, and are numbered. They are piled up in fives for display.

Buyers can obtain complete information necessary for auction during the period from landing to display.

2. Organization of Sales

The beginning and closing of auction are announced by a bell. The time is not especially fixed. When fishing boats enter port about 0400 to 0600 hours, auction begins at 0700 to 0800 at the earliest. From that time on, auction is made according to the time when catches are landed until 2000. An auction does not take more than ten minutes.

Usually there are no difficulties for landing and handling the catches, even if scores of fishing boats come into port at the same time. There are, however, regulations against overcrowding for the landing places and for mooring. Order of sales is determined by order of arrival, that is, by the order of weighing. If necessary, auction also may be held on the catches of several boats collectively or by dividing them into parts.

All fish catches are marketed under the Co-operative's marketing regulations. Buyers must be registered with the Co-operative. Buyers may obtain "tender rights" by depositing with the Co-operative a sum ranging from 10,000 to 200,000 yen for security. Fish sales can be made up to four times as much as the deposit. After inspection of the whole catch, buyers put in tenders in consideration of the current market conditions in consuming centers. They fill in the designated forms specifying the fish names, quantities and unit price which they want to purchase and submit these forms. The highest tender is accepted.

When there are two or more equally high tenders, the tender for the largest quantity is accepted. In cases where two or more persons have tendered for the same price and quantity, the earliest tender is accepted. Successful tenders are made public and posted immediately after the close of tendering.

The Co-operative (i.e. the Market) may also tender to maintain the price of catches and obtain goods for its own marketing and processing business.

Where the tender is lower than the proposed sales price, or where fish cannot be sold by tender, these fish are shipped as fresh fish or are frozen or otherwise processed by the Co-operative.

All fish catches are put up for tender as a rule. However, when shipment is consigned by member fishermen to the Co-operative, there is no need to take such action.

In the sale of abalone and other shellfish, an early tendering is conducted for the estimated quantity of landings during a certain period ranging from 15 to 30 days.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

1.1 Fishing port

The Fishing Port of Chikura is administered by the Chiba Prefectural Government.

Construction of the port and port facilities is the responsibility of the Public Works Department of the Prefectural Government, and maintenance and management of the port is conducted by the Agriculture and Fisheries Department of the Prefectural Government.

Fees are collected from the users of quays and other port facilities and land. Fees for the use of quays are paid by the Co-operative, on behalf of fishermen, out of the four percent commission charged for landing and auction services. The rate of the fee is approximately 1 yen per 50 kg of landings. The revenue is used for the payment of direct expenses of port administration as well as for expenses for repairing and dredging shipping channel and anchorages.

One official is stationed at the fish market as a supervisor of the fishing port.

The Fishing Port Council is an advisory organ whose membership consists of seven representatives of fishermen and five persons of learning and experience.

1.2 Fish market

The fish market is managed by the Hedate Fishermen's Co-operative Association organized under the provision of the Fisheries Co-operative Association Law for the purpose of marketing its members' catches.

2. Finance

2.1 Capital construction costs (since 1949)

Fishing port (including both sides of Hedate and Chikura)

Total amount of costs	¥	253 700 000
Hedate side	¥	181 918 680
Chikura side	¥	71 781 320

The construction costs of the Hedate side of the port are divided as follows:

Water installations	¥	113 488 000
Land installations	¥	68 430 000

Of these costs, 50 percent was covered by national subsidies, 25 percent by prefectural subsidies, and 25 percent by local bodies (town, and Hedate and Chikura Fishermen's co-operatives).

Fish market

Fish marketing halls	¥	11 715 795
Water supply facilities	¥	1 828 110
Offices	¥	2 167 265
	¥	15 711 170 (US $ 43 600)

2.2 Maintenance and running costs

The maintenance and running costs of the fishing port are borne by the Prefectural Government.

Costs of the fish market are borne by the Co-operative. The details of estimated costs for the Hedate Market for 1961 are:

Materials (containers etc.)	¥	730 000
Personnel expenses (9 persons)	¥	2 300 000
Traveling expenses	¥	100 000
Office expenses (postage, etc.)	¥	370 000
Business expenses (meetings, etc.)	¥	1 650 000
Facilities (repairs, etc.)	¥	800 000
Depreciation (buildings, etc.)	¥	1 250 000
Port charges, etc.	¥	200 000
Sundry expenses		220 000
Total		7 620 000

3. Personnel and Duties

The Hedate Fishermen's Co-operative has ten officers (seven directors, three auditors), 79 employees (including 27 women clerks) and 30 regular workers. These personnel are posted to carry on the business of the Co-operative and the services for fishing boats. Of these personnel, nine persons (seven men and two women), belonging to the Marketing Section of the Co-operative, are engaged in the business relating to the fish market, with some reinforcements from other sections in the busiest seasons.

The duties of the Marketing Section are as follows:

> Business relating to consignment shipping of fish and seaweeds, sales account, collection of bills, settlement of accounts and payment.
>
> Maintenance of waterworks, electrical appliances, furniture and fittings in the market.
>
> Inspection, control and cleaning of the market; public relations.

The duties also include the pilotage, towage, and the sorting, weighing, display, selling by tender and shipment of catches. Further, the services for procurement of necessary materials for the operation of fishing boats such as bait sardine, foods and other materials, as well as the business relating to crew's health and sanitation, are also included.

4. Common Administrative Services

4.1 Payments for sales and grant of credit

After catches have been landed and weighed, the name and weight of fish are recorded on slips, which are issued for the fishing boats concerned. Upon completion of tenders and transactions with buyers, the unit price and buyer's name are added to the copies of slips which are sent to the accountant.

For the buyer, there are five days' grace. For sales of fish over the limits (four times the deposit of the buyer) a cash transaction is generally made. In case the payment is not made within the fixed period, the tender right may be suspended, or the price may be collected from the deposits.

To the fishing boats belonging to the Co-operative, money is paid in exchange for the slips every fifth day into their accounts with the Co-operative's Credit Department. With regard to the payment of fishing boat owners other than the members of the Co-operative, accounts are settled in cash immediately after deduction of charges and other expenses.

4.2 Market intelligence

Market news in consuming centers, including landings and price

information, are received every day by the teletypes and telephones installed in the fish market, and they are issued to the buyers and fishermen.

4.3 Market promotion

Chikura Town Fishery Products Processing Co-operative Association, an association organized by 32 Chikura processors, to promote processing techniques and marketing.

5. Charges

The charges for landing and auction of fish and shellfish are calculated on a percentage basis of the proceeds and paid to the Co-operative as follows:

Fish	4 percent
Shellfish	10 percent

When shipment is consigned to the Co-operative, two percent of the proceeds realized at the consumption center markets is charged by the Co-operative as an additional commission.

E S B J E R G

Sixty years ago, Esbjerg had no harbor, cutters or fishing industry. Today, it is an important fishing port. Five hundred fishing boats account, together with the processing industry, for more than 40 percent of all wages and salaries paid in Esbjerg.

Esbjerg remains a traditional flatfish center, but its emphasis on catching live fish for export, especially to Germany, has faded and great steel cutters in recent years concentrate on catching herring and sandeel for reduction to fishmeal, oil and silage for minkfeed.

About 90 percent of landings for human consumption are sold by auction; the rest by private agreement between seller and buyer. Catches for reduction are handled by co-operative associations.

Fishing is carried out in coastal waters, off the Federal Republic of Germany and the Netherlands, and, in particular, the North Sea (in recent years also in the northern part of the North Sea, and occasionally off the Faeroe Islands, Iceland, Greenland and in the Barents Sea).

Exports are important and governmental regulations pay special attention to quality and quality control. Fresh and frozen fish are shipped to continental countries by train and truck, and to other countries by boat.

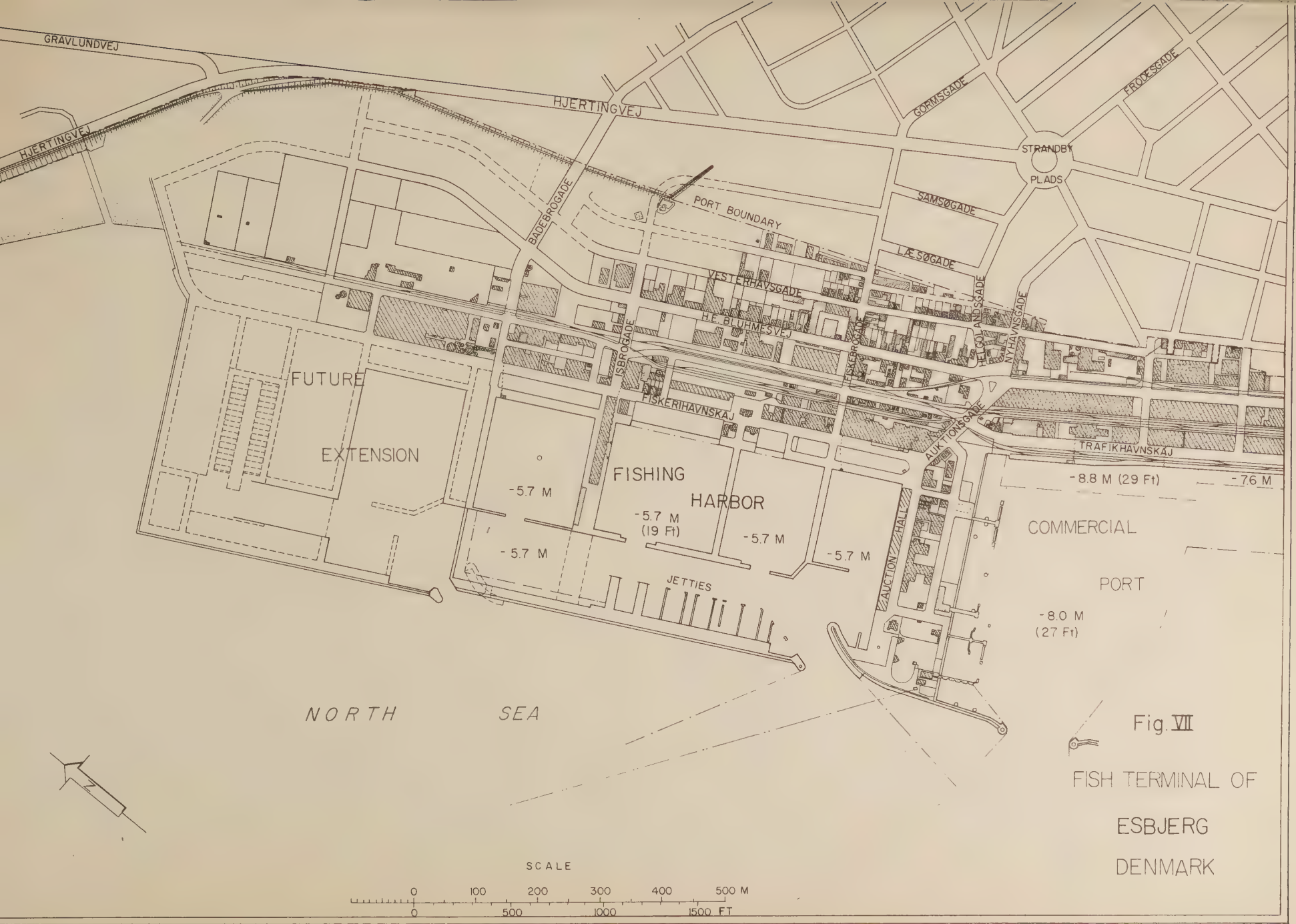

Fig. VII

FISH TERMINAL OF

ESBJERG

DENMARK

ESBJERG - - - - - DENMARK

I. GENERAL

1. Location

Esbjerg (population: 55,000) is on the southern part of Jutland's west coast (North Sea). It is the biggest town on the west coast.

2. Types of Fishing Vessels Served

Motorized steel cutters above 50 gross tons, mainly built for fisheries far from the home port.

Motorized wooden cutters above 15 gross tons, mainly fishing in the middle and southern parts of the North Sea.

Cutters between 5 and 15 gross tons, fishing near the coast.

Wooden boats below 5 gross tons.

3. Species of Fish

Fish for fresh consumption: plaice, common sole, cod, herring.

Fish for production of fishmeal and fish oil: herring, sand eels.

4. Fishing Areas from which Fish is Landed

The fishery is carried out in the coastal areas off Denmark, Germany and Holland, all over the southern and middle parts of the North Sea and, in recent years, in the northern part.

Occasionally fishing is done off the Faroe Islands, Iceland, Greenland and in the Barents Sea.

5. Marketing Areas to which Fish is Shipped

Fish is mainly sold to the export markets in Europe, U.S.A., Australia and, to a lesser extent, to the home market.

6. Marketing Methods

About 90 percent of landings for human consumption are sold by auction; about 10 percent, by direct sales to private buyers. Catches for reduction are handled by co-operative associations.

7. Market Authorities and Users

7.1 Market authority

Esbjerg fish harbor was built by the State and is administered by the Department of Hydraulic Engineering.

7.2 Users

Suppliers

Shipowners.

Dansk Andelsfisk (the Co-operative Danish Fish-marketing Association) which receives and handles its members' fish.

The Danish trout trade sells a great part of its production through the harbor.

Importers of fish from the Faroe Islands, Iceland and Greenland; mainly salt fish.

Buyers

Wholesale trade, processing industry (canning, filleting and freezing) fishmeal and fodder industry, retail trade.

8. Statistics

8.1 Fishing fleet

In 1960 the total fishing fleet registered in Esbjerg was 546 vessels with a total gross tonnage of 21,337 and total horsepower of 66,882. The breakdown:

Steel cutters: 14
gross tonnage: 50 to 185, total: 1,395
horsepower: 180 to 420, total: 4,077

Wooden cutters above 15 gross tons: 485
gross tonnage: 15 to 170, total: 19,780
horsepower: 70 to 300, total: 62,303

Wooden cutters between 5 and 15 gross tons: 12
gross tonnage: 110 (total)
horsepower: 25 on average

Wooden vessels below 5 gross tons (with or without motor): 35
gross tonnage: 53 (total)
horsepower: 20 (on average of 10 boats with motor)

Almost 75 percent of the boats above 5 gross tons were built in 1936 or in following years, 45 percent since 1946.

8.2 Number of trips

Besides vessels registered in Esbjerg, a considerable number of vessels from the rest of Denmark land their North Sea catches in Esbjerg. Annual number of trips breaks down as follows:

Month	Annual average 1958-1960	Percentage of total
January	103	0.8
February	656	5.2
March	977	7.8
April	862	6.9
May	2 258	17.9
June	2 041	16.3
July	1 293	10.3
August	1 225	9.8
September	1 061	8.4
October	890	7.1
November	813	6.5
December	372	3.0
Annual total	12 551	100.0

8.3 Quantities and value of landings

Volume and value of total landings in Esbjerg directly from the fishing grounds by vessels registered in Esbjerg as well as in the rest of the country, per month, is as follows:

Month	Annual average, 1958-1960 1,000 kg	1,000 kr 1/	Percentage of total Quantity	Value
January	1 823	491	0.8	0.7
February	13 243	3 695	6.1	5.1
March	17 527	5 207	8.1	7.2
April	14 815	4 454	6.8	6.2
May	29 910	8 687	13.7	12.0
June	32 579	9 947	15.0	13.9
July	25 492	8 883	11.8	12.3
August	28 349	10 055	13.0	13.9
September	20 360	7 745	9.3	10.7
October	15 960	6 477	7.3	9.0
November	12 472	4 687	5.7	6.5
December	5 142	1 819	2.4	2.5
Annual Total	217 672	72 147	100.0	100.0

The exact figures showing how much fish is sent to Esbjerg from other Danish ports by train or truck is unknown, but is estimated at about 50 to 55 percent of the value of direct landings.

8.4 Disposition of landings

It is not known precisely how much of the catch landed directly from the fishing grounds is sold as fresh, for processing and for reduction, but the distribution of the average catch in 1958-1960 could be estimated as follows:

	Quantity (percentage)	Value (percentage)
as fresh	3)	
for processing	8)	50
for reduction	89	50

Esbjerg is supplied with considerable quantities of fish from the rest of Denmark. For the most part this is filleted, canned, or otherwise processed. Only a very small quantity is included in the export of fresh goods from the harbor.

8.5 Users (1959)

1/ 6.907 Danish Crowns (100 øre) = US $ 1.00

8.5 Users (1959)

8.5.1 Sellers

There are 337 vessel owners in all and 1,167 fishermen engaged by the vessel owners, and their profit depends on the volume of the catch. Almost all of them are members of Esbjerg Fisheries Association which is a member of West Jutland Fisheries Association, one of the two head organizations existing in Denmark. The West Jutland Fisheries Association is mainly interested in the North Sea fishing. The other association - Danish Fisheries Association - especially takes care of the interests attached to the fishery within Skagen and in the fjords.

8.5.2 Buyers

Wholesalers

Number	Size of assessed revenue (crowns) 1/
8	0 - 2 999
2	3 000 - 3 999
3	4 000 - 5 999
2	6 000 - 7 999
6	8 000 - 9 999
10	10 000 - 14 999
8	15 000 - 19 999
6	20 000 - 29 999
8	30 000 - 49 999
6	50 000 and more
59	

The majority of wholesalers are members of the "Esbjerg Fish Exporter Association" which is affiliated to Denmark's Fish Trade and Sea Fishery Association.

Retailers

With stationary shops	7
With mobile shops	35
Total	42

The majority are members of the association of Esbjerg and environs which is affiliated to the Central Organization of

1/ Size of income on which the wholesalers concerned have to pay tax.

Fishmongers in Denmark.

Processors

For canned products	1
For cured products	11
For filleting	19
Fishmeal plants	3
Others	10
Total	44

The majority of the processors are members of the local trade association which is affiliated to nation-wide associations.

II. LAYOUT AND FACILITIES

1. Plan and Specifications

The total area of the Esbjerg fishing harbor is 849,100 m^2, of which 219,600 m^2 are water and 629,500 m^2 are land. Of the land, 219,000 m^2 are used for roads and railways and 76,000 m^2 have been used for various buildings. Figure VII shows the over-all plan and layout of the fish market.

2. Facilities

2.1 Selling area

There is one auction hall.

Hall: length 200 m, breadth 17 m.
area 3,400 m^2
wall material: wood on concrete foundation
roof material: wood
floor material: paving stones with concrete between them.

Built 1922-1925, extended 1931-1932
Capacity: 150 to 200 tons fish.

At present, discussions are going on about building a bigger auction hall.

2.2 Merchants' premises

There are 41 fish storehouses, none attached to the auction hall. Total floorage is about 4,500 m^2. The main parts of the storehouses are built of brick. A few are built of wood.

2.3 Processors

Esbjerg has 19 filleting plants, 1 canning factory, 11 plants for cured products and 3 fishmeal plants. There are ten plants for other kinds of processing. These plants partly work on fish landed directly in the harbor and partly on the considerable quantities bought from other ports of the country.

2.4 Ice plants

There are two ice plants owned by private firms. Average production of ice per 24 hours is 500 tons and could be increased to a maximum of 600 tons per 24 hours.

2.5 Cold storage

There are 14 cold storage plants which can freeze to - 20° to - 40°C. The total floorage amounts to 5,200 m^2. Total capacity for frozen fish is about 9 million kg. There are 20 other cold stores which can freeze to - 2° to - 10°C. Total estimated floor space is 700 m^2 and the capacity is about 80,000 kg.

2.6 Landing equipment

Tides: The average difference between medium high and medium low tide at Esbjerg is about 1.5 m.

Quays: The length of the quays is about 2,900 m, about 800 m of which are used for discharging; about 325 m for loading supplies; about 1,600 m as landing-stage for vessels; and about 175 m as hauling space for wooden floating boxes for keeping live fish.

Construction of another basin has been started. Within a few years, this will increase the present quay by 1,000 m. This will be used mainly for vessels.

Discharging facilities: It is possible at the same time to discharge about 11 vessels with fish for consumption and 13 with fish for reduction.

Discharging fish for consumption takes place by means of pails and hampers which are hoisted by the winch in the vessels up to the sorting tables, where the fish is sorted before it is put into boxes.

Average discharging rate per hour per vessel is 1,000 to 2,500 kg.

Fish for reduction is unloaded by roller tracks and conveyor belts directly into trucks. There are 13 roller tracks and conveyor belts. Maximum performance of each is about 15,000 kg per hour. The maximum total unloading per hour is 225,000 kg.

There are three cranes which can lift 3, 7, and 20 tons.

2.7 Containers

When the catch is sorted and weighed by the staff in the auction it is put into boxes of 35 kg each. These boxes (about 7,000) belong to Esbjerg Fisheries Association. In these boxes the fish is displayed for sale and the buyers take the goods from the auction in trucks, either to the different storehouses for cleaning, icing and packing in new boxes, or to the different industrial factories. The auction boxes are returned and both seller and buyer pay a certain rent for the boxes. At present the seller pays 22¼ øre and the buyer 10 øre per box.

After cleaning, the boxes are used again. Cleaning is done with fresh water, without disinfectants, from a special drilling under a pressure of five atmospheres.

2.8 Internal transport equipment

Fishlifts become more and more common in the auction hall and the storehouses. Conveyors and fishlifts are also used to a great extent in the different private plants, such as filleting plants, canneries, and fishmeal factories.

2.9 Sorting and weighing

The first sorting of the catch takes place when the fish is brought into the auction and, at the same time, the fish is weighed.

2.10 Fresh water and power supply

Water is furnished by the local waterworks to the hall and other rooms, which are also supplied with electricity.

2.11 Transport

A railway system owned by the Danish State Railways connects the harbor directly with the main station. A special freight station at the harbor also serves the fishing trade.

All roads and open spaces attached to the harbor are covered with paving-stones or asphalt.

Fish products that are not forwarded by train are loaded in big modern refrigerator vans. There is a regular service between the harbor and

the European markets. Modern refrigerator ships follow regular shipping routes to the most important harbors in Europe from where the goods, after transhipment, can reach all parts of the world.

2.12 Supply and repair

Private firms supply the vessels with food, liquid fuel and other necessities.

A number of private firms repair boats and motors.

The harbor has a very modern slip system which can handle 25 to 30 fishing vessels at the same time. Most vessels pay between 200 and 300 crowns for the use of the slipway.

2.13 Amenities

The harbor entrance is sufficiently marked with lights and with buoys with brooms. A salvage tug is always lying in harbor equipped with modern instruments for taking bearings and assisting vessels in and out of harbor in fog. The salvage tug is ready to assist all round the clock in cases of distress at sea.

All bigger firms in the fish harbor have established special canteens and changing rooms for their workers. They are, in this respect, subject to strict regulation by the fishery control, the factory inspectors and the local health authorities.

Fishermen use a public bath built near the harbor. There are laundry and other personal facilities and cafeterias and shops where visitors can buy the most common necessities. The harbor has two hotels particularly intended for fishermen.

There are some banks at the fishing harbor. In addition, town authorities have established an office at the harbor where fishermen are advised in municipal matters, especially tax questions.

In case of an accident in the harbor the ambulance service is called from the town. The local fire-brigade inspects the different plants as a preventive measure.

Diving assistance is available.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

Vessels wishing to sell their catch at the auction tie up alongside the quay off the auction hall and are served in turn.

The crew unloads the catch from the hold. Weighing, sorting into species and sizes and setting-up in the auction's boxes is carried out by the auction's staff on the fishermen's account. The amount is paid by the auction, which deducts the amount from the sum paid to the fishermen.

Unloading, sorting and setting-up start at 0200 hours in summer and 0400 hours in winter, and the sales are carried out as follows:

1 May to 30 September - from 0700 hours
1 October to 30 November - from 0800 hours
1 December to 28 February - from 0900 hours
1 March to 30 April - from 0800 hours

These hours can be changed if necessary.

The sorted and weighed fish is placed in rows in the auction hall with usually two to four boxes in each pile. On every box is a slip with a printed register letter and number of the vessel - a slip which forms the basis of the whole internal procedure in the auction. There are no restrictions about entry.

Between the time from setting-up in the hall until the fish goes on sale, the Fisheries Control of the Danish State, which is under the Ministry of Fisheries, must examine all boxes.

If fish is not fresh the lots in question get the designation "excluded from sale at the auction". To make sure this fish is excluded, it is put away and sprinkled with a conspicuous red color which is not washable.

2. Organization of Sales

The fish auctioneers always fix the time for holding the auction according to previous arrangements with the local fishermen's associations. Fish auctioneers in Denmark are independent entrepreneurs. In Esbjerg there are two auctioneers.

A posted notice in the auction hall announces how many vessels have catches to sell and the approximate quantity of the most important species. In this way buyers have some idea about supply and may adapt their purchase accordingly.

Normally the auctioneer starts by requesting a bid for the fish. From this basis he tries to make buyers give a still higher bid. The fish is sold to the highest bidder.

The buyers have pads with slips of paper bearing their initials or marks which they place on the boxes of fish they have bought. This settles misunderstandings about whether the fish is sold and by whom it was bought.

According to the rules in the regulations (See IV 5 and Annex), the buyer is, in principle, bound to examine the fish before the auction starts, and may theoretically complain of short weight only on delivery. In practice most auctioneers, however, receive complaints until the fish is delivered and removed from the auction room.

A committee for the hall has been set up composed of:

1 representative from Esbjerg Fisheries Association
1 representative from Esbjerg Export Association
1 representative for the harbor authority.

The committee deals with all practical things in connection with the daily work in the hall.

The buyer is entitled to have the fish he has bought handed over immediately after the close of the auction.

Normally the fish is sold at the bid obtained by the auctioneer.

If the prices are very low, because of large supplies, the fisherman who has put up the fish for sale may refuse to sell his catch at the price obtainable and may remove it from auction. It is then for the fisherman to sell his catch independently. He gets compensation from his organization in this case. Neither Esbjerg nor the rest of Denmark has any minimum-price system, but the fishermen's organization makes efforts to effect such a system in practice.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

Esbjerg harbor is a State harbor. It was built by the State and is administered by the Department of Hydraulic Engineering, a division of the Ministry of Public Works.

The Department of Hydraulic Engineering is represented by an engineer who is in charge of the daily work in the harbor.

The Ministry of Public Works has set up a seven-member harbor committee. Two of them have been appointed by the city council; five by the Ministry. The Ministry appoints one of these five members from Esbjerg Fisheries Association and a second from the association of businessmen in Esbjerg.

The engineer has close co-operation with the harbor committee. He is the superior inspector in the harbor.

Quality control is undertaken by the Danish Fishery Control (Ministry of Fisheries).

2. Finance

Over the Department of Hydraulic Engineering, the Ministry of Public Works pays the expenses for construction and maintenance of buildings and any other market installation.

The Ministry receives the following payments to cover part of the above expenses:

From sellers: Landing charges
Auction charges

From buyers: Rent of buildings.

3. Personnel and Duties

The following people are engaged permanently by the harbor and the auction:

General administration	33
Workers in the harbor	50
Hall-workers for auction	75
Total	158

4. Common Administrative Services

4.1 Payment for sales

The fishermen who have delivered the fish are entitled to have the accounts settled with the auctioneer immediately after the auction closes. In practice, the fishermen can collect the money in the afternoon for fish sold in the morning.

According to the regulation, every sale effected by the auctions is in cash. The auctioneer is not, however, for this reason, precluded from allowing credit. Credit is given to a great extent to those buyers whose financial standings the auctioneer knows very well, but any risk by such credit facilities is to be borne by the auctioneer alone.

At most auctions in Denmark the settlement of the buyers' purchases are arranged in such a way that the buyers settle their accounts with the auctioneer twice a week, e.g. Tuesday and Friday.

The auctioneer deducts in the accounts to the fishermen the taxes imposed on the goods and the costs which the fishermen have to pay to the harbor authorities for the use of the harbor. All goods which pass through the harbor have such duties imposed.

The auction collects 1.5 parts per thousand for the Fishery Association. This is considered as the fishermen's subscription to their trade union.

4.2 Market intelligence

The prices of the most important species obtained in Esbjerg are broadcast daily in addition to the landed quantities per day.

Similar information comes from the auctions in other towns, such as Tyborøn, Hirtshals, and Skagen. In this way, it is possible to get a picture of the prices all over the country.

Buyers also have contact with their customers in the different export markets, so that all the time they are informed of the quantities wanted and the prices which could be obtained.

4.3 Weather forecasting

The latest meteorological reports are broadcast repeatedly in the course of 24 hours.

5. Regulations

The Regulation for sale of fresh fish at voluntary public auction in Esbjerg is added as Annex.

6. Charges

The following charges are in force:

Auction charges:	For fish directly from the sea not above 1.90 percent of the selling sum if unsorted, in addition 220 øre/100 kg as sorting and working costs, 1/
	For fish carried by land not above 2.8 percent of the selling sum including working costs, if unsorted, in addition 170 øre/100 kg for sorting.
Bridge toll:	2 percent of the selling sum.
Hall duty:	0.5 percent of the selling sum.
Rent of boxes:	22 1/4 øre by the seller. 10 øre by the buyer.

1/ "Working costs" mean the costs which will be paid for having the fish brought up from the vessels to the sorting tables and for the transportation to the auction hall.
"Sorting costs" are those to be paid for having the fish sorted on the sorting tables

ANNEX

Regulation for sale of fresh fish and other marine animals at voluntary public auction in Esbjerg

1. According to the rules stated below, voluntary public auction is held for fresh fish, crayfish, lobster, shrimp and mussels by the auctioneer authorized for that purpose by Royal license according to law No. 28 of 11 March 1892.

2. A person who wants to sell his goods at the auction must inform the auctioneer about the approximate quantity.

3. Auction is held on the ground of the harbor of Esbjerg on the places and at the times appointed in "Regulations for fish auctions on the ground of the harbor of Esbjerg".

   Auction could be held outside the ground of the harbor of Esbjerg if desired, and if the auctioneer finds it expedient.

   Auction is held at least once a day.

   The time for holding auction is announced by the auctioneer by a notice (in the auction hall or at the auction place) or in other expedient ways.

4. The individual lots are announced in the succession in which they are notified to the auctioneer. By notice at the auction place, the auctioneer is bound to inform the buyers about the notifications he has received and the order in which they are received.

5. All goods mentioned in point (1) in the Regulation which are offered at the auction, are announced according to weight, but if the seller agrees, the auctioneer may depart from this rule. Other goods are announced according to more definite rules given by the auctioneer.

6. The sale takes place either by bid and outbid or the auctioneer mentions the price which the seller has requested, and then a lower price until somebody wants to buy. If more than one person makes a bid at the same time, the auctioneer must try to encourage them to an outbid, and if this is not given the auctioneer is entitled to decide whose bid is to be knocked down.

7. The seller is entitled either by himself or by means of the auctioneer to take back the announced lot before knockdown has taken place. Fish taken back in this way cannot be sold again before a new notification has taken place (compare points 2 and 3).

8. All goods of which sale is forbidden according to the legislation are excluded from sale at auction, and seller is responsible for the observance of these provisions.

9. The goods are sold in the condition in which they are found at hammer stroke as buyer must examine the fish before the auction starts so that later complaints of the quality are out of the question.

   It is the seller's and the auctioneer's duty to give buyers opportunity to survey the fish in the best possible way. The above rules, however, are not valid when fish is sold without being at the auction place, which occurs under exceptional circumstances. In that case, seller is responsible not only for the quantity, but also for the determinations of quality (average weight and the like).

10. Immediately after closing the auction, the seller is bound to deliver the fish sold, correctly according to weight and size. If, however, the knockdown concerns the rest of a total lot, the buyer is bound to wait for it until the main part of the lot has been delivered and is bound to receive the rest without any objection against its quantity.

11. Immediately after the closing of the auction the buyer is bound to receive the fish bought. The payment is to be paid to the auctioneer in cash at hammer stroke if he might demand it and, at any rate, before the delivery of the fish.

    The auctioneer is, as surety, responsible towards the seller that the bids confirmed by him by hammer stroke are paid, unless something else is agreed to between the auctioneer and the seller.

    If the fish bought is not paid for, and is fetched by the buyer within two hours after the closing of the auction, the seller, or the auctioneer if seller is not present, is entitled offhand to sell the fish by auction at the first buyer's expense, so that he pays the possible deficit as well as all costs, while possible profit is no business of his.

12. When the purchase price is settled by the buyer he gets a delivery slip from the auctioneer for the fish sold, after which delivery takes place and the buyer gives back the delivery slip as a proof of the receipt of the fish.

13. The auctioneer is entitled to a charge stipulated by the Ministry of Agriculture, and seller is to pay this amount.

A list of the stipulated charges giving a specification of the rates must always be found in the auction hall on a noticeboard.

In the charge due to the auctioneer, the duty to the harbor of Esbjerg is included, as well as the rent for using the auction hall.

These amounts are paid to the auctioneer in accordance with a special agreement between the Ministry of Agriculture and the Ministry of Public Works.

14. When the auction is over the auctioneer must settle with seller. The account must contain information about the various items and the prices obtained. Seller is entitled to demand settlement of accounts and payment of the amount due to him on the very day the auction is held.

15. If a seller wishes the auction to be held outside the auction hall or on the Esbjerg harbor territory, this can be arranged, if the auctioneer agrees and seller points out a suitable place for holding the auction.

If, on the very day on which an auction outside the hall has been planned, one or more auctions in the hall have also been fixed, the former is not allowed to take place until the last mentioned auction or auctions in the ordinary hall of Esbjerg harbor have been finished, and these auctions must not be interrupted in favor of auctions outside the harbor territory.

16. The auctioneer himself is not allowed to bid or make somebody bid at the auction. The auctioneer is not allowed to be owner or partner of any fishing trade (including wholesale, export and retail), or of any firm processing or canning fish.

Eventual partners in the auctioneer's profession or partners in any other activity or in any kind of business in which the auctioneer is a partner are not allowed to make bids or to make somebody else bid.

The auctioneer is, in performance of his job, subject to superintendence from the Chief Constable in Esbjerg.

According to instructions from the Chief Constable the auctioneer is bound to keep one or more notification and auction journals, which are authorized by the municipal corporation.

The auctioneer is bound to inform the Ministry of Agriculture about all particulars wanted concerning the auctions held by him, and to admit the customs or other authorities determined by the Ministry to check the journals he keeps about the sale, as often as it is demanded.

17. A printed copy of this regulation shall always be posted in the auction hall.

18. The regulation is subject to amendments and supplements.

This regulation comes into force on 25 April 1925 from which date the regulation drawn up under 10 June 1922 concerning sale of fresh fish etc., at voluntary public auction in Esbjerg with supplements of 14 February 1923 and 17 December 1924 is repealed.

The Ministry of Agriculture

16 April 1925

sign. Kr. Bording/

L.P. Larsen

Supplement to regulation for all fish auctions for the holding of which license is given according to law No. 451 of 22 December 1939 about sale of fresh fish etc., from public auction, of law No. 28 of 11 March 1892 about the same subject.

If, during auction sale, it happens that more than one buyer bids the same price for the same lot, it will be knocked down to the buyer, who, according to the auctioneer's opinion, made the first bid, if no outbid is raised, so that only this buyer is booked for the lot.

The auctioneer must, however, if possible before hammer stroke, show to whom he intends to knock down the lot so that others have an opportunity to make outbids.

The present supplement comes into force immediately. A copy of this supplement shall always be posted in the auction hall.

The Ministry of Fisheries

20 September 1951

sign. Knud Ree/

G.L. Mourier

G D Y N I A

Gdynia is a good example of a seafish market in which the Government influence extends far beyond setting up and making available port and market installations and managing sales.

Distant-water fisheries from Gdynia are steadily being developed. Vessels are owned by a public company called Dalmor. The distance to the grounds requires long voyages (few landings per ship per year) and sea processing by factory-trawlers. Mother-ships also take salted herring from catchers at sea and freeze catches in foreign ports for transhipment to Gdynia by freighters.

Cutter fisheries are carried out on nearer grounds. Also here, a public company ("Arka") operates, as well as individual fishermen and a fishing co-operative.

The market is controlled by the State. "Arka" is the authority and manager of the market, deep-freeze storage, ice factory and fishmeal factory. Apart from its own catches, "Arka" takes the catches of Dalmor and those of the individual cutter enterprises. "Arka" treats and handles them and sells them to a central sales organization (CODZ) whose task is to provide further distribution for fresh consumption, processing and cold storage. CODZ takes all catches of the co-operative.

Prices are fixed; there is no buyers' market with free sales. Consequently, there is neither market place nor auction halls and fishing vessels unload all day long in order of arrival.

Fig. VIII

FISH TERMINAL OF

GDYNIA

POLAND

GDYNIA - - - POLISH PEOPLE'S REPUBLIC

I. GENERAL

1. Location

Gdynia (population: 230,000) is in the Bay of Gdańsk, 20 miles above the mouth of the river Vistula.

2. Types of Fishing Vessels Served

Steam and motor trawlers, including one factory trawler; cutters and coastal fishing boats.

3. Fishing Areas from which Fish is Landed

The nearby Baltic Sea; the North Sea (about 750 miles away); the waters off Iceland (about 1,400 miles away). There is a tendency towards the exploitation of more distant fishing areas such as Greenland (2,800 miles away), Newfoundland (3,000 miles away), Labrador (3,250 miles away) and West Africa.

4. Marketing Areas to which Fish is Shipped

Shipments are made throughout the Polish People's Republic.

5. Marketing Methods

Fish is sold at fixed prices to one institution responsible for further distribution.

6. Market Authorities and Users

6.1 Market authority

P.P. i U.R. "Arka" (Fishery and Fishing Service Enterprise "Arka") administers the market.

6.2 Users

Suppliers: state-owned deep-sea fishing companies, cutter and coastal fisheries (there are fishery co-operatives and individual fishermen organized in the union of cutter owners).

Buyers: one sales organization - "Centralny Ośrodek Dyspozycji Zbytu" (CODZ).

7. Statistics

7.1 Fishing fleet

Steam and motor trawlers (31 December 1960)

Size	Below 300 GRT	300 to 500 GRT	500 to 600 GRT	Factory trawler (2,600 GRT)	Total
Number	-	10	33	1	44 1/
Percentage of total	-	23	75	2	100

1/ 24,600 gross registered tons in total.

Cutters (31 December 1960)

Length (meters)	13 to 17	17	24	Total
Number	63	10	68	141 1/

1/ 141 cutters and 2 motorboats with 6,900 gross tons in total.

7.2 Number of trips

Trips by steam and motor-trawlers (1960)

January	12
February	12
March	12
April	19
May	20
June	30
July	27
August	35
September	17
October	31
November	28
December	37
Total	280

The main landings take place from May to December. In the remaining months repairs and maintenance of the ships are carried out.

Trips by cutters (1960)

The number of trips by cutters with voyages of 1 to 5 days' fishing is not recorded.

7.3 Quantities and value of landings

The following are the quantities of landings by types of fishery and and months in 1960.

Months	by Trawlers	by Cutters	Total
	Metric tons		
January	367	1 555	1 822
February	396	3 003	3 399
March	619	4 238	4 857
April	1 116	2 858	3 974
May	1 728	2 961	4 689
June	1 621	493	2 114
July	2 994	494	3 488
August	3 329	705	4 025
September	1 909	989	2 898
October	1 696	1 514	3 210
November	2 249	1 072	3 312
December	1 773	1 205	2 978
Annual total	19 679	21 087	40 766

Landings by steam and motor trawlers constitute about 38 percent of the total landings. The lowest landings are from January to March. Landings by cutters constitute 41 percent of the total landings. The highest months are February to May. Besides trawlers and cutters, 9,193 tons (18 percent) were landed from mother-ships, which bring catches from trawlers and cutters at sea. The other 3 percent is fish caught by trawlers in the North Sea, frozen in foreign ports, and delivered to Gdynia by cargo-liners.

Mother-ships are not included in the table above, since Gdynia is not their home port. There are, at present, two mother-ships (one 8,800 GRT; the other 7,083 GRT) with the home port of Szczecin. The two vessels serve only for transferring salt herring at sea and have neither processing nor freezing installations.

The value of the landings at the port of Gdynia may possibly be estimated at 330 million zloties. 1/

7.4 Disposition of landings

Statistics concerning the disposition of the landings for use as fresh fish, processing, and reduction are not available. The catches of the factory trawler are frozen on board.

7.5 Users

7.5.1 Number of vessel-owners and their associations

There are two state-owned deep-sea fishing companies: "Dalmor" running the fleet of the 44 steam and motor trawlers (including one factory-trawler), and "Arka" running a fleet of 58 cutters. "Arka" also administers the fishing harbor.

Both companies are members of the Union of Fish Industries in Warsaw "Zjednoczenie Gospodarki Rybjej". This is the organization responsible for management, planning, and development of the entire sea fishing industry of the Polish People's Republic.

Besides state-owned deep-sea fishing companies, Gdynia harbor has one fishing co-operative with 27 cutters, belonging to the Union of Sea Fisheries Co-operatives in Gdynia and individual fishermen owning 58 fish-cutters and motor boats. The fishermen are organized in "Zrzeszenie Rybaków Morskich" (Union of Sea Fishermen).

7.5.2 Landings of different groups of suppliers (1960)

1/ 4 Zloty = 1 US $

Suppliers	Number of trawlers owned	Number of cutters owned	Landings (metric tons)	Percentage of total landings
P.P.D. "Dalmor"	44		19 679	38
P.P. i U.R. "Arka"		58	11 200	22
Fish Co-operative "Jedność Rybacka"		27	4 242	8
Individual fishermen		58 1/	5 645	11
Total	44	143	40 766	79

1/ Including two motorboats

7.5.3 Buyers

All fish landed is bought by one sales organization, the "Centralny Ośrodek Dyspozycji Zbytu (CODZ)" which delivers the fresh, frozen, and salted fish to the processing industry and wholesale trade.

II. LAYOUT AND FACILITIES

1. Plan and Specifications

The total area of the fishing harbor is 60.8 ha (150.2 acres) which includes 22.8 ha of land (56.3 acres) and 38 ha of water (93.9 acres). Of the 22.8 ha of land, 13 ha (32.1 acres) are used for various buildings. Figure VII shows the over-all plan and layout of the harbor and fish market.

2. Facilities

2.1 Selling area

In the Polish People's Republic there is no auction sales system. Therefore there is no need for spacious auction halls. Halls for discharging, handling, preparing and partly processing the fish landed, as well as cold stores and ice factories are in the first row of the quays. In the second row are workshops, stores, a fishmeal factory, herring-salting housing and administration offices.

2.2 Discharging and handling facilities

There are eight halls:

Hall 1 (Arka): is a three-floor brick building of steel-reinforced concrete in skeleton construction. Its total useful surface area is 3,400 m^2.

Hall of "Centrala Rybna": has 1,710 m^2 of total useful surface area used as follows: 1,000 m^2 for salted herring storage; 350 m^2 for fresh fish handling, and 360 m^2 for live fish storage.

Hall of Fishing Co-operative "Jednośc Rybacka": has 600 m^2 total useful area.

Hall for cured herring store: 1,500 m^2 surface.

Hall 2 "New" (Arka): has 3 floors. Has 1,860 m^2 total surface for fish discharging, handling, and processing (filleting).

Hall 2 "Old" (Arka): has 1,375 m^2 surface, of which 725 m^2 is for discharging and handling of fish and 650 m^2 is for garaging electric cars.

Hall 3 (Lawica): has 1,630 m^2 surface, of which 800 m^2 is for fish discharging and handling, 350 m^2 for salt storing, 480 m^2 for storing fishing gear.

"Dalmor" Administration Building : has 680 m^2 surface, formerly used as salting hall.

The total surface amounts to 12,155 m^2, of which 6,135 m^2 is used for fish discharging, handling, preparing and processing (filleting); 4,180 m^2 for salting and storing herring; 360 m^2 for live fish; and 1,480 m^2 for other storage.

2.3 Processors

There is one fishmeal factory (owned by the state and under "Arka") with a capacity of 45 tons raw fish per day.

2.4 Ice plants

There are two state-owned ice factories with around-the-clock production of about 75 tons. Ice is produced in blocks of 138 and 25 kg.

2.5 Cold storage

Two state-owned cold stores with deep freezing storage rooms, rooms for fresh fish storage, for ice storage and freezing facilities with a total yield of about 90 tons per 24 hours (brine, tunnel and contact freezing).

2.6 Landing equipment and discharging facilities

Since there is no tide on the Baltic, the fishing harbor level is stable.

The length of the quays for discharging trawlers is about 380 meters. One factory trawler and four big trawlers can berth alongside at the same time.

The discharging of cutters is carried out at one concrete pier and 11 wooden piers with a total length of about 2,150 meters.

The fish is brought out of the fish-holds by mobile electric winches. Roller tracks and conveyor belts are also used.

2.7 Containers

No special boxes for harbor turnover are used. The same boxes, made of wood (for whitefish of 40 kg capacity, for herring and sprat of 30 kg capacity) are used for discharging, for harbor traffic and for forwarding. On the average, boxes are used five to six times. There is a mechanical washing device capable of washing about 1,200 to 1,800 wooden boxes during any 8-hour shift. Washing is done with hot water and steam, with some disinfectants added.

The salted herring are discharged from trawlers and cargo-liners in barrels of 100 kg net weight; frozen fillets come from factory-trawlers in cartons of 13 kg net weight.

The fresh fish are unloaded from fishing vessels, sorted, and weighed, after ice is removed. The weight of sea salted herring in barrels is fixed according to an assumed average weight per barrel. The final weight is stated after repacking of salted herring into trade barrels.

2.8 Internal transport equipment

Small electric cars as well as trucks with lorries are used in internal harbor traffic.

2.9 Fresh water and power supply

Fresh water is supplied to halls and other buildings by the municipal waterworks of Gdynia.

The halls and other rooms are supplied with electricity furnished by the Electric Power Works (Państwowe Zakłady Elektryczne).

2.10 Transport

In the port area there is a network of hard-paved roads and a railway network of 3,700 meters total length. There is no special railway station for dispatching fish. The State Railway Administration maintains a goods office in the harbor. In top season, 20 to 40 railroad cars are loaded and discharged in 24 hours; up to 750 cars monthly.

2.11 Amenities

There is a special fishing harbor medical center with various services. First-aid service is open day and night. All fishing and processing enterprises have shower-baths, recreation rooms and social clubs for their employees.

2.12 Bunkering stations for coal and fuel

In the fishing harbor there is one fuel bunker station for cutters. Trawlers are supplied in commercial ports outside the fishing harbor. The bunker stations are state-owned.

2.13 Repair shops

There is a repair yard for cutters in the fish port. Fishing companies also have their own workshops. The fishing co-operative has a crane for hoisting cutters as long as 17 m. Trawlers are repaired outside the fishing port.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

Fishing vessels are assigned to berthing places by the fishing harbor authority ("Arka"). The boats are unloaded in order of arrival by teams of dock laborers employed by the fishing harbor authority "Arka". Unloading generally begins in the morning and is carried on all day and night.

The landed fish is sorted according to species, sizes, and quality, weighed and packed in wooden boxes. The filled boxes are placed in the halls in piles of three to four layers. From the halls, the boxes are forwarded for further distribution (iced fish), or to cold stores for freezing or temporary storage, or for processing.

The harbor authority "Arka" is responsible for ascertaining the quantities

landed and for informing the trawler companies and shipowners of the quantities discharged.

Classifiers from the fishing harbor authorities and trade inspection authorities classify fish by species and quality during unloading.

2. Organization of Sales

There is no auction sale system. Fish landed by state-owned fishing companies and by individual fish cutters is bought at fixed prices by "Arka". After first handling and preliminary processing (gutting, filleting, icing, freezing, salting, preparing for further forwarding, but not canning), the entire landed catch is sold by "Arka" to the Central Sales Organization (Centralny Ośrodek Dyspozycji Zbytu or CODZ). The fish landed by vessels belonging to fishing co-operatives are also delivered to CODZ. This organization, belonging to the Union of Fish Industries in Warsaw, is responsible for further distribution of landed fish to direct consumption centers or further distribution for processing and storing in cold stores (frozen fish). CODZ is not itself engaged in canning, but only distributes the acquired fish.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

The fishing port of Gdynia is owned by the state and is subject to the Ministry of Shipping. The harbor is administered by the Fishing and Service Enterprise ("Arka") responsible for carrying out new construction and enlargement of land installations, maintenance and protection of pier installations, roads and buildings. "Arka" is also responsible for the management of all harbor facilities, discharging of fishing vessels, fish handling and preparing for further forwarding; it runs cold stores, ice factories and a fishmeal factory.

During unloading, quality is controlled by the sanitary authorities, according to existing regulations. Fish unfit for human consumption is forwarded to the fishmeal plant.

2. Finance

"Arka" bears the expenses of construction of all buildings and any other harbor and market installations and their maintenance. "Arka" receives payments for harbor charges and rental fees for buildings and installations.

"Arka" receives landings from its own cutters and also buys fish from trawler companies and individual fishermen. "Arka" sells fish to CODZ at a fixed price which includes the purchase price paid to fishermen and fishing companies, costs of handling and packing, losses in goods, and the profit for "Arka".

3. Personnel and Duties

The following personnel are engaged by 'Arka' (August 1961):

21	employees for general administration
18	employees for buying and weighing fish
240	workers for loading and unloading
350 to 450	workers for handling, preparation, processing (gutting, filleting, salting)
173	workers in cold stores, ice plants, freezing plants
6	classifiers for quality control and classification

Total: 808 to 908 persons

4. Common Administrative Services

CODZ buys the fish landed by the vessels of the co-operative directly, whereas "Arka" buys fish from the vessels of state-owned companies and individual fish cutters in order to sell it to CODZ. The prices of the fish which the co-operative sells to CODZ is the same as that of "Arka". CODZ effects payments against invoices issued by the suppliers.

There is no special service for market intelligence, nor is there any special market organization for promotion of fish consumption.

5. Agreements with Users and Regulations

"Arka" contracts with users of the market for rent of buildings and places, as well as for various harbor services.

6. Charges

Charges for various harbor services are collected from fishing companies and shipowners, according to size and tonnage of fishing vessels.

G O T H E N B U R G

About one-third of Sweden's total landings are sold at Cothenburg. Cutters working coastal waters and the North Sea serve the market. Only some call Gothenburg home port. Herring is the main catch. To a certain extent Gothenburg also receives imports from Denmark; larger quantities are exported. Considerable quantities of herring are also landed from the fishing grounds directly to foreign countries (Denmark, Great Britain, Federal Republic of Germany).

Fish are sold by ascending auction. Generally, several auctions for different species take place side by side, and, if necessary, not only in the morning, but also later in the day and even in the evening. Buyers need no special license for admittance to the auction; retailers are also regular buyers.

There are private minimum prices fixed by the fishermen's organizations without a special price guarantee. The system is of limited importance. However, strong influence on market business is exerted through the application of Government regulation concerning minimum and guaranteed prices in connection with the auctioning system. This regulation is carried through with the concurrence of the fishermen's organizations and is a strong market regulation. Restriction of landings may also be employed, if necessary. Surplus fish that cannot be sold at minimum prices is accepted and utilized by an organization created for this purpose. This fish is not to be utilized for the inland fresh fish market. Part is processed for the inland market; the rest is exported both as fresh and processed fish. As a result of this utilization, the fisherman is paid a guaranteed price - if necessary with Governmental subsidies - that is lower than the respective minimum price, but which covers the fisherman's costs.

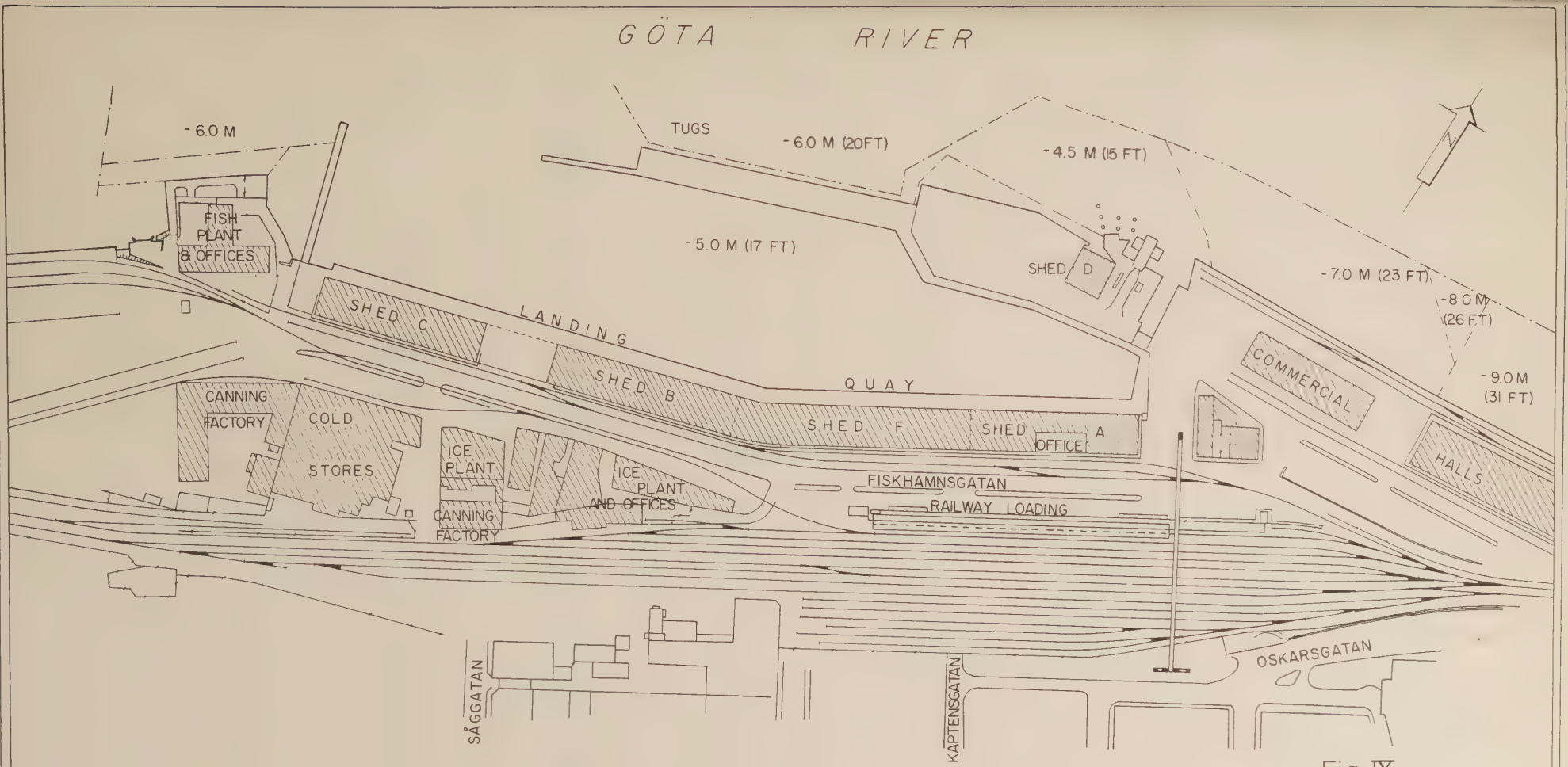

Fig. IX

FISH TERMINAL OF

GOTHENBURG

SWEDEN

GOTHENBURG - - - - SWEDEN

I. GENERAL

1. Location

Gothenburg (population: 400,000) is on the west coast of Sweden at the mouth of the Göta River on the Kattegat-Sea.

2. Type of Fishing Vessels Served

Small motor-trawlers mainly; coastal fishing vessels; Swedish and Danish freight-boats.

3. Species of Fish

Mainly herring, mackerel, cod and haddock; also coal-fish, whiting, plaice, pollack, and other fish.

4. Fishing Areas from which Fish is Landed

Fishing grounds include: North Sea, Skagerrak and Kattegat.

5. Marketing Areas to which Fish is Shipped

The whole of Sweden, Western and Eastern Germany and to a small extent England, Belgium, France and Italy.

6. Marketing Methods

Public auction.

7. Market Authorities and Users

7.1 Market authority

The Fishing Port office, a municipal authority subject to the Gothenburg Harbor Board.

7.2 Users

Suppliers: include fishermen who are members of "The Swedish West Coast Fishermen's Federation" and Swedish lake fishermen. Imports arrive, mainly from Denmark, through agencies at Gothenburg.

Buyers: include wholesale merchants, exporters, co-operative trading associations, the retail trade, the processing industry (canning, smoking, freezing, fishmeal and fodder industry).

8. Statistics

8.1 Fishing fleet

8.1.1 Motor trawlers

There are about 300 motor trawlers which range from about 40 up to 140 GRT with an engine power from about 125 to 600 horsepower. Generally, Swedish fishing boats are equipped with echo-sounding installations, radio direction finders, radio telephones, and lately, several vessels have also been fitted with radar and decca instruments.

Most of the 300 motor trawlers have their home ports somewhere in the archipelago outside Gothenburg or along the west coast of Sweden.

8.1.2 Coastal fishing fleet

There are about 100 fishing vessels which range from about 5 to 40 GRT with an engine power of about 10 to 125 horsepower.

8.2 Number of trips (1960)

Months	By motor trawlers	By other suppliers	Total
	Number of trips		
January	1 832	99	1 931
February	1 887	127	2 014
March	2 043	208	2 251
April	1 358	194	1 552
May	1 188	336	1 524
June	1 723	434	2 157
July	1 550	298	1 848
August	1 855	272	2 127
September	2 189	321	2 510
October	3 006	293	3 299
November	2 384	240	2 624
December	2 013	169	2 182
Total	23 028	2 991	26 019

8.3 Quantities and value of landings (1960)

	Quantities (Metric tons)	Value (1,000 Skr. 1/)
Herring	41 467	19 336
Sprat	1 344	1 459
Freshwater fish	9	56
Imported fish	1 855	2 989
For fishmeal and fodder	2 576	710
Other species of saltwater fish	19 959	22 907
Yearly turnover	67 210	47 457

The quantities landed in the fishing port of Gothenburg during the first years of its activity (beginning in 1910), amounted to about 12,000 metric tons annually, which was sold for about 1.5 million Swedish crowns. Nowadays about 60,000 metric tons of fish are sold by public auction for about 40 million crowns yearly. This is slightly more than one-third of all fish landed annually in Sweden. The Swedish fishing fleet lands comparatively large catches, especially of herring, directly to several

1/ 5.17 Skr. = 1 US $

ports in Denmark, the Federal Republic of Germany and Great Britain. Furthermore, these boats often land their catches at smaller ports on the west and south coasts of Sweden.

About 85 percent of all fish brought ashore at the harbor is caught by trawl.

8.4 Disposition of landings

No statistics are available on the proportion of landings as fresh fish for human consumption and for fishmeal processing. Quantities of landings for fishmeal and fodder are quite small. (Ref. Section I 8.3)

8.5 Users

Suppliers: include approximately 3,000 fishermen, (boat owners plus crews) delivering catches to the fish harbor. They are members of "The Swedish West Coast Fishermen's Federation" and are organized in about 20 local organizations.

Buyers and their associations are:

50 wholesalers	Fiskgrossisternas Förening, Gothenburg (Fish Wholesalers' Association)
300 retailers	Göteborgs Fiskdetaljhandlareförening, Gothenburg (Gothenburg Fish Retailers' Association)
70 fishmongers	Göteborgs Fiskmånglareförening, Gothenburg (Gothenburg Fish Vendors' Association)
20 canning factories	Svenska Konservfabrikernas Riksförening, Lysekil (Swedish Canners' Association)
3 deep freezing plants	
15 curing firms	Sveriges Saltsillförening, Gothenburg (Sweden's Salted Herring Association)
1 curing firm	Storsjöfiskarnas Försäljningsförening, Lysekil (Deep Sea Fishermen's Sales Association (handling mostly only long line caught cured ling))

II. LAYOUT AND FACILITIES

1. Plan and Specifications

Figure IX shows the layout of the fish harbor.

2. Facilities

2.1 Auction halls and premises

The main buildings in the fish harbor are made of wood and bricks. The supporting structural members of the roofs over the auction halls are steel. All decks and floors in the halls and packing rooms are made of reinforced concrete and coated with asphalt. The quays are wooden.

The total area of the fish harbor is as follows: open auction halls 5,200 m^2; depot for containers 4,000 m^2; 44 packing rooms for private fish-dealers 3,400 m^2; 63 rooms for merchants' offices and accommodation 2,900 m^2; rooms for hall-workers 250 m^2; fish harbor office 400 m^2; and office for the port railway 100 m^2.

2.2 Packing facilities

For private fish-dealers there are 44 packing compartments available in close connection with the auction halls. Some packing-rooms are also available in other buildings outside the fish harbor.

2.3 Processors

There is a private fishmeal plant for surplus fish, in which the fishermen are partners.

2.4 Ice plants

There are two ice-factories, one in the fish harbor and one outside, both owned by private firms. There are also two private refrigeration and cold storage companies outside the fish harbor.

2.5 Cold storage space

Cold storage is provided by many of the wholesalers in their packing rooms.

2.6 Discharging facilities

Fish is packed in boxes aboard the vessels. The crews of the fishing vessels deliver the fish boxes on the quay where port workers place them on specially-constructed pallets and further transport them by fork-lifts to allotted places for sale in the auction halls. Eleven fork-lifts, belonging to the fish harbor authority, are in use.

The length of the quay is 1,160 meters. It can berth about 50 fishing vessels. There are 500 meters of quay - eight meters wide - available for discharging about 20 motor trawlers at the same time.

The depth of the fish harbor is five meters. The tide is insignificant and presents no problems.

The port of Gothenburg is comparatively ice-free. In hard winters strong icebreakers can easily keep the harbor open for traffic.

2.7 Containers

Each time the trawl is hauled aboard, the fishermen immediately pack the fish in wooden boxes together with ice which are stowed into the hold. Three types of wooden boxes are used, with capacities of about 45, 30 and 20 kg. Fishermen supply boxes of their own, buying them from special merchants. The buyer takes over the boxes together with the fish, at a price of two-thirds of the price which fishermen paid. Only <u>new</u> boxes are used.

2.8 Fresh water supply

A high value is set on sanitary control within the fish harbor. The quays and decks within the auction halls are thoroughly cleaned and hosed with water daily. A pipeline is constructed along the quay of the fish harbor for supplying the fishing boats with fresh water for cleaning decks, holds and gear.

2.9 Transport

Deliveries of fish within Sweden are usually sent from Gothenburg by railway. Every weekday three trains leave the port railway station of the fish harbor with connections to different directions. One train leaves on Sundays. Some fish are forwarded within the country by truck. In rural districts of Sweden retail distribution of fish is, to a certain extent, carried out by fishmongers' trucks. Export of herring takes place by vessels chartered for a limited time; other export of fish is mostly by rail.

2.10 Bunkering

Quick fuel oil bunkering is provided by private firms from special small tank-vessels directly on board the fishing boats.

2.11 Amenities

Recreation rooms, shower baths, washing and drying rooms are available to harbor employees.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

Discharging begins on weekdays at 0500 hours. Especially in the winter season when large catches of herring are landed, unloading may take place earlier, perhaps at 0200 or 0300. Dispatches arriving at the fish harbor by truck in the evening from October to March are unloaded from 2000. Fish boxes are weighed by hall-workers after discharge of the fish.

As soon as the fishing boats arrive, the sellers must report on special forms and declare the catches for sale. These reports are listed in proper turns and the fish quantities will be sold accordingly in the halls. The landings of fish are placed for sale in different groups as per agreement between the fish harbor authority and fishery associations concerned. Representatives of the fishermen's organization control the sizes of different species of fish. Before the auctions begin, labels showing species sizes are placed in the fish boxes.

A room is open day and night at the entrance of the fish harbor for report of landings and information.

2. Organization of Sales

2.1 Auctions

The public auctions begin on Mondays, Wednesdays, Thursday, and Saturdays at 0700 hours, on Tuesdays and Fridays at 0730. Just before the beginning of the auctions the buyers are informed by loudspeaker about the number of auctions, places of sale for different assortments, and any other important details. As a rule, there are eight or nine auctions running at the same time on the following system:

One auction for shellfish and smaller packages.
Two auctions for mackerel.
Two auctions for herring and sprat.
Four auctions for other species.

In seasons with large catches of herring there may be several sales later in the day. If necessary, there are evening auctions.

The ascending auction system is practised. Auctions are carried out by employees of the fish harbor office. One auctioneer and one controller or office clerk are engaged in each auction. The former notes highest bids and prices. Accounting is made on the basis of the figures obtained

at the auction. The controller does the recording during the course of the auction. There are two hall-workers attending the auction: one calling for the buyers' attention and pointing with a stick at the various assortments about to be sold; the other putting labels with the buyers' names on the boxes just bought.

Quick delivery is obtained through this sales method. Generally, the auctions last for two or three hours or more, until all fish are sold.

The fish are sold by weight or by box.

During the course of the auction the fish harbor authority looks after the fishermen's interests by securing minimum or guarantee prices, according to regulations.

Anyone may buy without special licence.

The buyers must remove their purchases from the auction places for further delivery to warehouses and shops.

2.2 Minimum and guarantee prices 1/

On Sweden's west coast there is a system of minimum and guarantee prices in operation that concerns a certain number of species. The purpose of these minimum and guarantee prices is to avoid unduly low prices in times of great catches without encouraging unnecessarily large landings. The price regulations are only applicable to fish entirely suitable for human consumption and processing, and which are able to stand a transport of normal duration.

The minimum prices are fixed by the State Agricultural Marketing Board and the State Committee of Price Control after consultation with the fishermen's organizations. The minimum prices are the lowest prices fishermen can expect in the auction, and that is "for goods intended for consumption fresh on the home market or for certain classes of export."

If fish cannot be sold at the fixed minimum price, it is taken over by an organization set up to take over and utilize surpluses and in which the professional fishermen's organizations are shareholders. This "price regulation association", i.e. the "West Coast Fish" (there are, in a similar form, also a "South Coast Fish" and an "East Coast Fish"), has to utilize the fish in the best way possible (salting, freezing, canning, export, fishmeal). Utilizing the fish for fresh consumption on the home market is excluded. For this fish, the fisherman is paid a guarantee price that covers his running expenses on a fishing voyage.

Therefore, the guarantee price is the lowest price a fisherman can expect. It is fixed beforehand and is known to the fisherman before he begins his voyage. The price regulation association "West Coast Fish" receives

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1/ See also:
Food and Agriculture Organization of the United Nations.
1957 Fisheries Study No. 4: Fishermen's Organizations and the Regulation of Fish Prices in Sweden. By Hessle and Verständig, Rome.
Page 69 onwards.

certain "increments" as subsidies to the guarantee price from the Marketing Board. Should the fish be sold later at minimum price or above, no price increments will be paid.

Utilizing surplus fish for canning will occasionally be done but is not normal, canners rather paying generally the minimum price or above for raw material. However, the fish taken over by "West Coast Fish" also include fish that cannot be classified as surplus fish in the proper sense of the word, but that is sold by "West Coast Fish" to countries with centralized import arrangements.

"West Coast Fish" has to take over the fish from all fishermen residing within the area of this price regulation association, even though they are not members of an affiliated organization. On the other hand, fishermen are not obliged to deliver their surplus fish to "West Coast Fish". If, however, a fisherman should sell fish below the minimum price without the approval of the price regulation association, "West Coast Fish" can refuse acceptance of his surplus fish for the future. The same is possible if fishermen do not observe the "restrictions on landings" that can be imposed with the approval of the Marketing Board to stabilize the market.

Besides these minimum prices fixed by the government, there are minimum prices fixed by "West Coast Fishermen's Union"; however, no price guarantee is provided as to these private minimum prices.

The State price regulations are financed by fees principally levied on first-hand buyers. The fees are levied both on Swedish catches and on fish imported as far as the fish are sold at or above minimum price. The regulations and fees concern only seafish.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

The fish harbor is owned by the Municipality of Gothenburg and administered by the Gothenburg Harbor Board.

Special rules, issued by the Gothenburg Harbor Board with reference to the fish harbor authority, are in force. In compliance with these regulations, Gothenburg Harbor Board has the sole authority to carry through and organize public auctions for all fish landed within the area of the fish harbor of Gothenburg. The rules in question are duly authorized by the county-administration of Gothenburg and Bohus Län.

Fish quality is controlled by officials of the municipal sanitary authority. Fish not suitable for human consumption is confiscated.

2. Finance

Gothenburg Harbor Board bears the expenses of construction and repair of buildings and quays in the fish harbor. Many of the wholesale fish merchants in the fishery branch at Gothenburg are tenants of offices and warehouses within the fish harbor.

3. Personnel and Duties

The office and auction staff include 35 employees. For other routine work and outdoor work in the halls and on the quays there are 30 persons such as foremen, truck drivers, hall-workers, and watchmen in permanent employ. Furthermore, there are about 35 temporary hands engaged daily for discharging the cargoes.

4. Common Administrative Services

4.1 Payments for sales and grant of credit

During the auctions invoices are made up by the fish harbor office. After the end of the auctions the auctioneers and controllers check the records. When everything is found to be correct, the invoices are completed and the buyers' accounts are made out. The invoice is handed over to the fishermen or seller with payment.

In order to protect the fish harbor authority against any losses and to avoid economic risks as regards the purchase, the buyers are obliged to hand over to the fish harbor authority banker's guarantee or depositor's book or obligations. The values of these guarantees vary from about 500 to 25,000 Skr. It is, of ccurse, also possible to make purchases with cash.

4.2 Market intelligence

Medium prices of first quality kinds of fish are quoted daily. These quotations are broadcast every day after the morning auctions and can also be read in the newspapers of Gothenburg.

4.3 Promotion of fish consumption

Föreningen för Fiskpropaganda, (Fish Promotion Association) Gothenburg, was established in 1928, but is now called Västkustens Fiskbyraa. (The Fishery Bureau of the West Coast). This association represents fishermen's and fish merchants' organizations of the west coast of Sweden. It has a board of twelve members, six from the fishermen's organizations and six from the wholesalers and retailers.

Its purpose is to promote fish consumption, particularly that of species caught in large quantities, such as herring, cod, mackerel, haddock and whiting.

The revenue of the association mainly comes from a tax equivalent to Skr. 0.08 on each box or crate of fish sold by auction in the fish harbor of Gothenburg and other west coast ports. The collection of the tax is carried out by the fish harbor authorities at Gothenburg for all landings and is then given up to the fish promotion association. This is part of a task carried out by the fish harbor authorities for promotion purposes. In addition there are also contributions paid by the

fishermen's organizations.

The association's main activity consists of organizing cookery demonstrations in various parts of the country and in distributing cookery recipes and posters to the general public, colored folders for schools, advertisements, films and so on. Västkustens Fiskbyraa co-operates with Centralnämnden för Fiskpropaganda (Central Fish Promotion Board), Stockholm.

5. Charges

The selling commission charged is four percent on herring and sprat and five percent on other fish. On salt herring, salted and dried fish, the fee is two percent. These percentages include auction charges, discharging, transport by fork-lifts from the quay to the places of sales in the halls, weighing and all expenses for administration.

Whole boatloads of herring, which are not unloaded within the fish harbor, are charged at two percent, although such cases have been rare in recent years. The charges included in the two percent are those for the auction and those for administration. After being sold by public auction such cargoes are delivered to buyers outside the fish harbor.

The charge for fresh water for the fishing boats is Skr. 0.02 for each fish box sold.

GREAT GRIMSBY ON HUMBER

Since 1847, when the railway reached Grimsby, the port has grown into one of the largest landing and distribution centers in the world for deep-sea fisheries with trawlers and seiners.

Trawlers from 400 to 750 gross tons and more operate up to 2,000 miles away in nordic waters including the Barents Sea, Spitzbergen and West Greenland. On a busy day, as much as 20,000 cwt, or approximately 1,000 metric tons, may be handled, the annual quantity exceeding 4.2 million cwt (about 215,000 metric tons) including landings by foreign fishing vessels.

In addition to supplying England and Wales, there is considerable export, especially of frozen fish. About 65 percent of landings are marketed fresh, and 25 percent frozen. An interesting development is that some of the larger frozen fish processors have taken up vegetable processing to utilize surplus production capacity, especially during seasonal fluctuations in fish landings.

Grimsby is a dock port open only at high water. Market Authority is the British Transport Docks section of the British Transport Commission, a nationalized undertaking. It owns the docks, the land and some buildings; it bears construction and maintenance expenses, raises a great number of charges and enacts the necessary regulations.

The Grimsby Fishing Vessel Owners' Association (a non-profitmaking organization) engages shore labor for landing fish and subsequent work. A trading company of this association, the Grimsby Exchange Ltd., owns the discharging equipment, including aluminum boxes, which must be returned within 24 hours and which are not for distribution. The Exchange is also responsible for providing fishing boats with fuel. Each company has one or more salesmen of its own; some are fishing vessel owners or directors of trawler companies. There are also free-lance salesmen.

The auction is an ascending one which, when a maximum bid has been reached, may switch to a descending auction for some time. Each salesman generally sells one particular variety. In this way, it may occur that several salesmen serve one ship. The salesmen will settle with the company as well as with the buyers.

Recently, there has been a trend towards increasing quantities being sold under contract. Such sales are limited to distant-water catches and apply chiefly to cod.

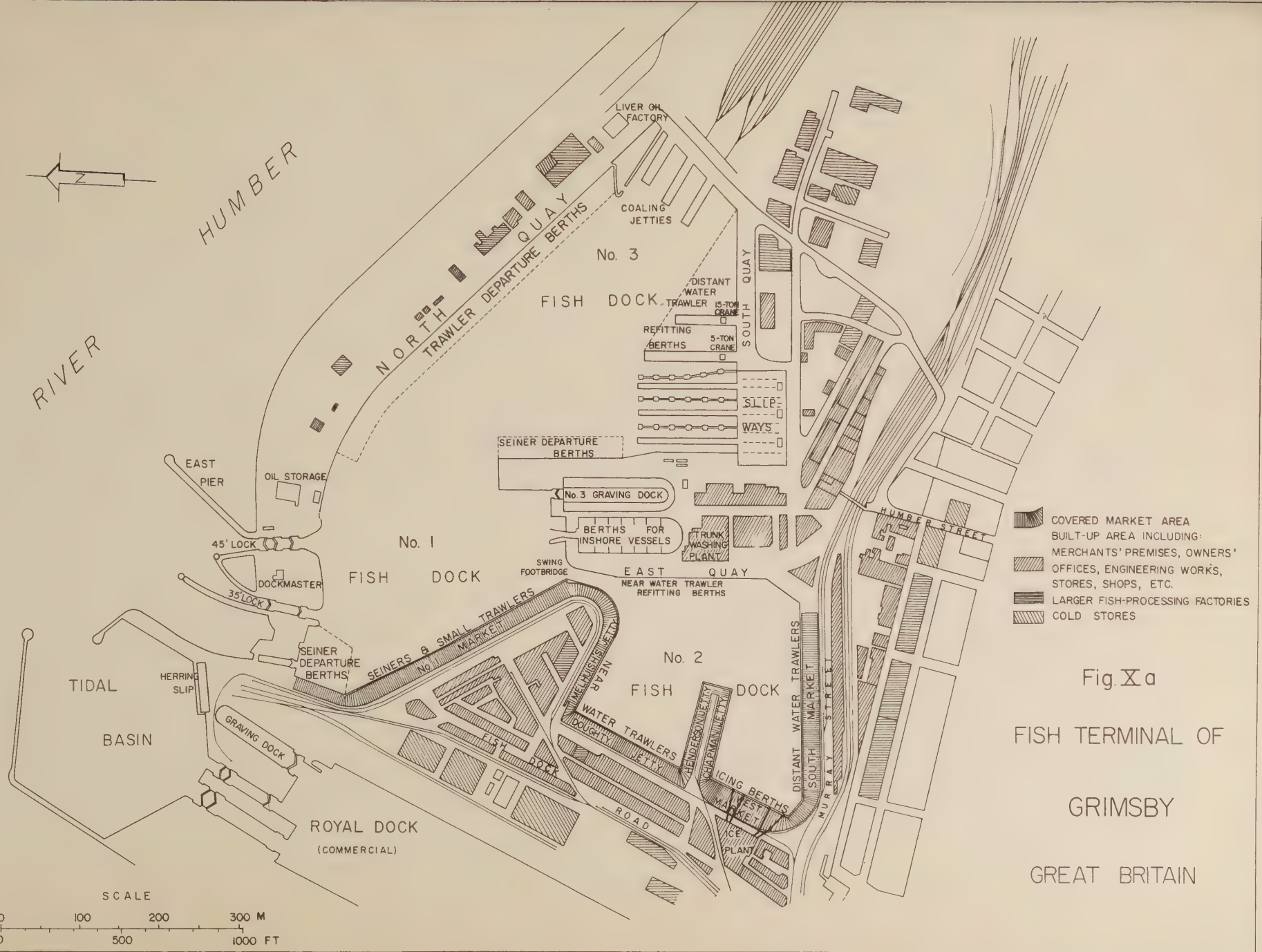

Fig. X a

FISH TERMINAL OF

GRIMSBY

GREAT BRITAIN

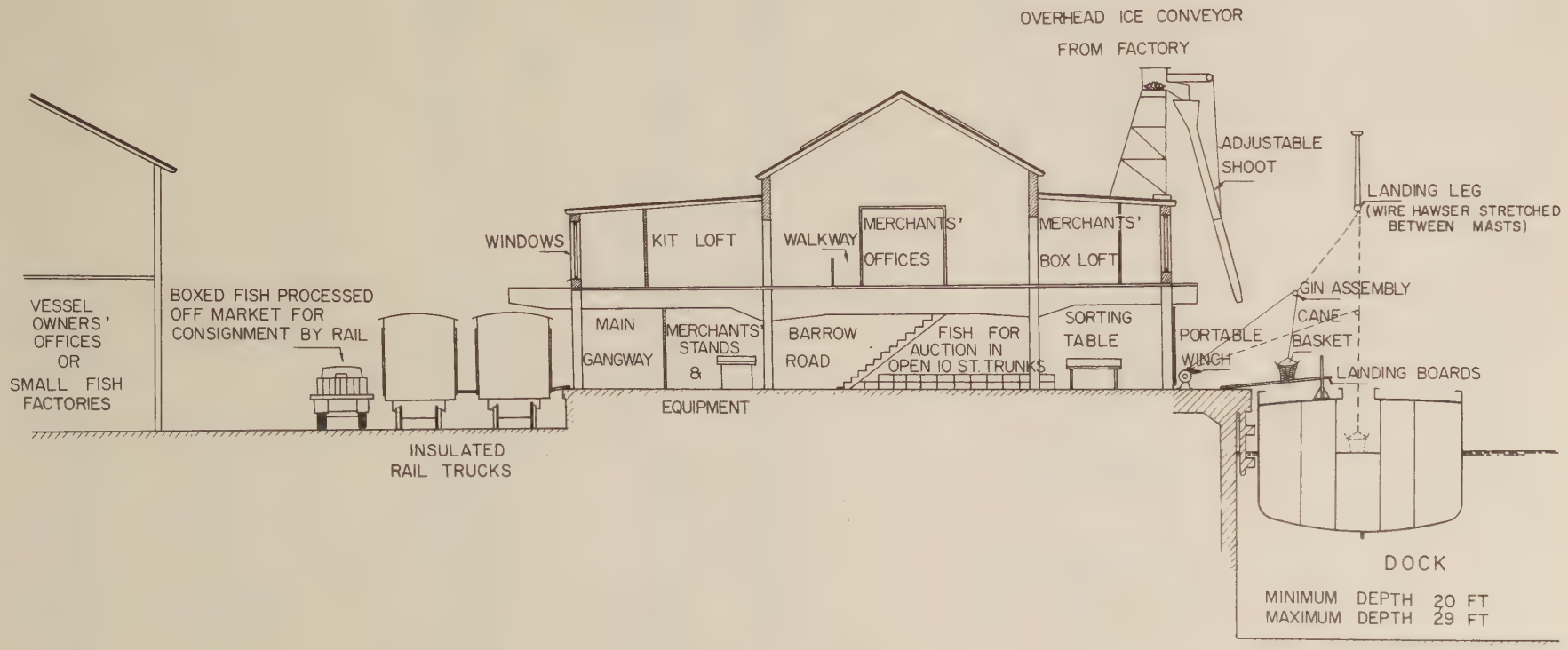

Fig. X b

FISH TERMINAL OF
GRIMSBY
GREAT BRITAIN

TYPICAL CROSS SECTION
OF
MARKET AREA

GREAT GRIMSBY ON HUMBER - - - UNITED KINGDOM

I. GENERAL

1. Location and Historical note 1/

The town of Great Grimsby (population: 97,000) is on the east coast of England very near the mouth of the River Humber. References to fishing activity go back at least to 1150 A.D. The turning point in Grimsby's fishing history came with the arrival of the railway in 1847. The Railway Company built a commercial dock and then ordered nine fishing vessels. The first fish dock was built in 1856. This dock covered six acres and consisted of a small landing pontoon, fish market and one fish-curing house. Expansion was rapid and this dock was enlarged several times. The most recent fish dock was added in 1934.

2. Types of Fishing Vessels Served

British fishing vessels include deep-sea steam and motor trawlers; motor seiners using the "snurrevaad" (Danish Seining) method; a small inshore motor fleet - lining, potting for shellfish and trawling.

Foreign fishing vessels from the Faroes, Denmark, Iceland, Federal Republic of Germany and Belgium bring their catches to Grimsby regularly, especially when they are advised of anticipated shortages on the local market.

3. Species of Fish

Cod, haddock, flat fish; there is a great variety of available fish, but no herring industry.

4. Fishing Areas from which Fish is Landed

1/ From the booklet "Grimsby, the World's Premier Fishing Port" (published by ED. J. Burrow and Co., Ltd., Cheltenham and London) by kind permission of the Grimsby Trawler Owners' Association.

Trawlers	- North Sea (10 to 350 miles away) North of Scotland (300 to 450 miles away) Faroes (600 miles away) Iceland (850 to 1,300 miles away) North Norway (900 to 1,300 miles away) Barents Sea (1,200 to 1,700 miles away) Bear Island (1,500 miles away) Spitzbergen (1,650 miles away) West Greenland (1,600 to 2,000 miles away)
Seiners	- North Sea (30 to 350 miles away)
Inshore boats	- North Sea (1 to 50 miles away).

5. Marketing Areas to which Fish is Shipped

Daily deliveries are made to all parts of England and Wales. There is a small export of fresh fish to the continent and a larger export of frozen fish, principally to Australia and the Soviet Union.

6. Marketing Methods

Fish is purchased by wholesalers at the auction, who in turn sell to retail shops and catering establishments on offer or contract. Recently, fish is to some extent also sold under contract.

7. Market Authorities and Users

7.1 Market authority

The British Transport Docks section of the British Transport Commission. The Commission is a nationalized undertaking.

7.2 Users

Suppliers are British and foreign fishing vessels.

Buyers are coastal wholesale fish merchants.

8. Statistics

8.1 Fishing fleet (31 December 1960)

Distant-water group - 68 steam and 6 motor trawlers.

Registered length - 155 to 190 feet.
Gross tonnage - 400 to 750 tons.

Near and middle-water group - 58 steam and 44 motor trawlers

Registered length - 100 to 140 feet.
Gross tonnage - 200 to 450 tons.

(Many motor trawlers in this group are now under construction).

Seiners - 98

Registered length - 45 to 70 feet.
Gross tonnage - 20 to 50 tons.

Note: This fleet has been largely built up in the past 15 years.

Inshore fleet - 17

Registered length - 20 to 55 feet.
Gross tonnage - 5 to 30 tons.

There is no herring fleet.

8.2 Number of trips

Early in the week, and on Mondays in particular, there are daily landings with up to 40 arrivals. At the end of the week there is a decline. Occasionally there are fewer than ten arrivals. Monthly arrivals vary between 300 and 550. In 1960 there was a total of 5,367 landings.

8.3 Quantities and value of landings (1960)

On a very busy day 20,000 cwt (approximately 1,000 metric tons) are handled.

Month	British landings		Foreign landings	
	Weight (cwt)1/	Value (£)2/	Weight (cwt)	Value (£)
January	224 527	868 151	76 447	285 000
February	214 386	861 473	89 596	295 959
March	320 727	1 117 200	110 582	314 723
April	268 801	947 076	135 747	479 979
May	336 926	1 087 404	87 329	270 494
June	351 595	1 130 836	44 376	147 777
July	325 621	1 094 632	27 489	112 861
August	315 254	1 172 386	27 586	132 973
September	291 127	1 181 625	24 389	104 378
October	339 245	1 396 924	26 888	142 746
November	236 587	1 092 331	26 676	116 017
December	276 766	1 053 983	60 138	224 251
Annual Total 3/	3 482 985 (176,900 metric tons)	12 952 108	747 303 (37,960 metric tons)	2 633 293
Grand Total 4 230 288 cwt (214 860 metric tons)				
Grand Total £15 585 401				

1/ cwt = 50.80 kg

2/ 0.357 £ = 1 US $

3/ After minor adjustments to monthly figures

Some 370,000 cwt (18,800 metric tons) of foreign fish worth £3 million, was brought into the Commercial Docks on cargo vessels. More than 100,000 cwt (5,080 metric tons) of British fish worth about £400,000 came to the port overland from other British fishing ports. Both lots were distributed through Grimbsy coastal wholesalers or used in fish factories.

8.4 Disposition of landings

No accurate statistics are kept of the quantities of fish going into the various outlets. A reasonable estimate is:

Fresh market	65 percent
Frozen	25 percent
Smoke-cured	7 percent
Fishmeal	2 percent
Pet food	1 percent

There is no canning, and salt curing has diminished to insignificant proportions. Some fish is cooked to produce fish sticks and fish cakes. A high proportion of the fresh, frozen and smoke-cured fish is filleted in the port prior to distribution. This causes a loss of about 40

percent in the landed weights shown. The resultant offal is sent to a reduction plant.

8.5 Users

At the end of 1960 there were 12 trawler companies managing the entire trawler fleet. Within each company there would often be a number of separate vessel owners. Seiners are managed by eight companies. Ownership varies from skipper-owned vessels to companies having up to eight vessels. The small inshore fleet is largely skipper-owned.

The Grimsby Fishing Vessel Owners' Association represents all trawler and seiner owners in the port. Association members also act as agents for foreign fishing vessels arriving in the port. Seiner owners have established a separate group, Grimsby Seiners' Association, to deal with aspects peculiar to their interests.

There are 425 coastal wholesale fish merchants. Many of them operate from the fish market itself. The larger ones have premises and factories off the market. It is estimated that 100 of the largest wholesalers handle 80 percent of the fish supply. All wholesalers are members of the Grimsby Fish Merchants' Association.

There are up to 40 coastal wholesalers who quick-freeze fish. They vary from men with just a single plate freezer to companies with freezing factories costing £100,000. None of this is done on the market itself.

II. LAYOUT AND FACILITIES

1. Plan and Specifications

Figure Xa shows the layout of the Grimsby fish docks and Figure Xb shows a typical cross-section of the market area.

2. Facilities

2.1 Selling area

All market structures and surrounding buildings are of brick or reinforced concrete construction. Heavy timber cappings and rubbing pieces surround the edge of the dockside, and the piers outside the lock gates are wooden.

A large section of the covered market is used to display fish after landing, and it is auctioned from this position. On a busy day, the selling area stretches almost one mile.

2.2 Merchants' premises

The smaller coastal wholesalers have only an allocated space on the floor of the market which is also used early in the day as the auction area. This is known as a "stand". There are 470 stands owned by 335 merchants. Into this space they bring their purchases, carry out filleting, weigh, make up and pack mixed orders into boxes. Equipment on the stand includes a filleting trough, ice kits, scales and either a large wooden bin or refrigerator. The latter are used as holding stores for fish which is not sold on the day it is purchased, either because of lower demand than anticipated or to bolster supply when the next day's landings are small.

On the first floor of the market hall, immediately above the merchant's stand, there is usually his small office. A telephone is the first essential requirement. On the same floor, immediately opposite his office, the merchant stores his spare fish boxes.

Merchants with a big turnover have premises off the market. These are generally situated across the roadway which skirts the market halls. They vary from simple one-story buildings to substantial buildings which cost up to £10,000.

2.3 Processors

The biggest buyers, who often have interests in trawler ownership as well, generally operate away from the market area in large factories. These may be as far as a mile from the dock. Factory layout varies considerably, depending on the outlets on which the particular firm concentrates. Five very large firms have premises for fresh fish distribution, frozen fish production, smoke-curing and fish cooking. Seasonally the freezing operation may switch from fish to vegetables.

There are three fishmeal factories. Their intake consists chiefly of the waste from merchants' processing, but it may be supplemented by small quantities of condemned and unsold fish. All factories are company-owned. The main one has merchants and vessel owners as directors and principal shareholders.

There is a cod liver oil plant which produces medicinal, veterinary and industrial oil.

2.4 Ice plants

There is only one ice-producing plant. It is a very large one which produces about one ton of ice for every ton of fish landed. Sixty per-cent of the ice produced goes into fishing vessels for the preservation of the catch. The rest goes to merchants to arrest deterioration during distribution. The directors and principal shareholders of the company are vessel owners and fish merchants. Ice is extremely cheap, costing vessel owners £1 per ton.

2.5 Cold storage

Grimsby, of all the U.K. fishing ports, has taken the leading role in providing cold storage facilities to meet the needs of the fish freezers. The biggest freezers have their own private stores. These may be insufficient to meet their full requirements, but there are large company-owned cold stores to meet all demands which are also available to the public. The port can provide cold storage facilities for nearly 100,000 tons.

2.6 Landing equipment

Fish are bulk-stowed or laid on shelves in the fishing vessels. They are manhandled into cane baskets by landing crews, hauled ashore with the use of small portable electric winches, sorted on tables into wire baskets, weighed and displayed for sale in aluminum boxes, each holding 140 lb. All this equipment is owned by the Grimsby Exchange Ltd., a company which provides common services to vessel owners. Some 30,000 aluminum boxes are available. After use they go through a mechanical washing process.

Charges for everything except box washing are raised by the Grimsby Exchange Ltd. A vessel owner hires boxes from the company for a particular landing, and pays at the rate of one shilling ($ US 0.14) per box.

Experiments for the mechanization of landings are in progress.

The Grimsby Fishing Vessel Owners' Association and the Grimsby Exchange Ltd. 1/ employ about 200 people. A large number of these are outside workers. Most are engaged in aluminum box washing, repair and handling, basket-making and maintenance, and maintenance of other landing equipment. Twelve are employed in the salvage and towing section, and ten trimming coal during bunkering. There are 33 indoor workers who, in the main, cover office administration of both organizations.

2.7 Containers

Fish merchants purchase their fish in the landing boxes. These boxes have to be returned empty to the market within 24 hours. For distribution purposes, merchants use wooden boxes for fresh fish.

There is a tendency for new non-returnable boxes to supplant the returnable ones. The latter are sometimes coated with plastic to prevent impregnation with fish slime and to permit easy cleaning after use.

Merchants have their names painted or stencilled on box ends. Many different types of boxes are used but perhaps the most common is one which

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1/ In view of the importance of this Company and its links with the Fishing Vessel Association, an explanatory note has been added at the end of this chapter.

holds about six stone 1/ of fish and one stone of ice. This box is accepted by the railway for dispatch as weighing one hundredweight (112 lb).

2.8 Internal transport equipment

The only transport seen in market halls are barrows. Fish is barrowed from the auction to merchants' stands or to trucks parked just outside the market. Merchants with premises off the market use their own trucks to bring fish and to return them to trains. A few factories which have fork-lift trucks bring them into operation when the truck has arrived at the factory for unloading and movement within the building. One or two cold stores have a full system of palleti ation.

2.9 Fresh water and power supply

2.9.1 Water

Water used on the fish market itself comes from a nearby stream. It is taken to a storage tank and chlorinated before circulation. This service is supplied by the dock authority at no charge to the user.

Fresh water for fishing vessels is provided by the dock authority on the departure quay.

Many fish merchants' premises take water from the district water mains supply. The ice company, fishmeal factory, and the largest processors take water from their own private boreholes.

2.9.2 Power

The dock authority provides a considerable amount of electricity for the dock area. Street and market lighting is supplied free. Power for refrigerators and office heating is metered. Factories are generally supplied through the town mains.

2.10 Sorting and weighing

When fish arrives in the market from the trawler it is shot out onto a table where ice is separated from the fish; the fish are then sorted. The sorting, by species, is a special job, as the port is renowned for the number of species available. Any species may be broken down into size. Large, medium and small is a common breakdown, but more intricate variations

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1/ Stone = 6.35 kg; cwt (hundredweight) = 50.80 kg.

are occasionally used.

The weighing is carried out on portable platform scales.

2.11 Transport

2.11.1 Rail

Excellent railway service is provided. It enables coastal wholesalers to develop direct trade with retailers and catering establishments and thus avoid reliance on the inland wholesale markets, e.g. Billingsgate. There are eight special fish trains daily except Saturdays, when there are three. On peak days, 230 freight cars are used. Many cars are insulated. None are refrigerated. On hot days blocks of solid carbon dioxide are placed in the cars to arrest the melting rate of ice in the fish boxes. There is a numerical loading system which has been found easier than loading by destination. Trains are so scheduled to leave Grimsby that they arrive at their destination in time for fish to be in shops 24 hours after the auction. Four thousand destinations are served.

About two-thirds of the fish dispatches go by rail. Merchants get a special rebate if they undertake to send all their fish by rail.

The Fish Merchants' Association has an arrangement with the railway authority whereby fish for many retailers in a particular town or area can be bulked to take advantage of cheaper rates. Boxes are double-labelled. The top label shows the Association agent and destination. The lower label shows the consignee.

2.11.2 Road

Road service has expanded considerably since 1945. It is used largely by the very big companies and especially for frozen fish distribution. A big company may have a depot in the middle of the country to which fish will be sent from Grimsby and perhaps other ports. The depot might make up orders and then organize a radial road distribution system.

Frozen fish is taken in insulated vans. These are being replaced by refrigerated ones.

2.11.3 Water

Water transport is rarely used from the port except when a large export order is due for shipment.

2.12 Amenities

Fishermen spend very little time in dock and as this is generally a family occasion, there is little demand for central amenities. A hostel provides meals, beds, games and quiet rooms, which is used mainly by men living out of town.

Few dock workers live more than three miles from their work. Public and private transport is generally sufficient to enable them to lunch at home. Large factories have canteen facilities for their employees, and there is a dockers' canteen which stays open night and day.

The labor force engaged to land fish have washing and changing rooms and a social club. Many companies run football and cricket teams. One or two of the largest have their own social clubs and sports fields.

Medical and first-aid services for the whole of the Fish Dock area are provided by: 1/

The Clinic, situated in Fish Dock Road and inaugurated in 1934 by the Grimsby Trawler Owners through the medium of the The Grimsby Exchange Limited. The service of the Clinic covers the care and supervision of trawler personnel with special regard to their welfare on board ship and also the provision and maintenance of the medicine chests on board the trawlers according to the requirements of the Ministry of Transport and Civil Aviation.

The Clinic consists of a dispensary, with X-ray Department and consulting rooms and is under the personal supervision of a medical officer who has occupied this position since 1937. He is assisted by two full-time surgery assistants.

Since 1934 the Clinic has gradually enlarged the scope of its activities and now gives emergency treatment to any person within the Dock Area.

A First-Aid Station (first established in 1923) was accommodated in a new building in December, 1952. This station was created initially as a separate service for dock employees other than fishermen, but under the Fish Dock Medical Services Committee, all services have been amalgamated.

Subsidiary First-Aid Stations. These emergency stations are manned by personnel trained in first-aid who are available for nearby emergencies. Each first-aid station is linked by telephone and thus has facilities for calling the Medical Officer or ambulance during hours when the Clinic is closed. The Subsidiary Fist-Aid Station in Murray Street was completed in December 1952 and its location and hours of availability were specially selected and arranged to meet the needs of the fish dock lumpers (shore workers).

During a period of 12 months, the First-Aid Station and subsidiary first-aid stations deal with approximately 5,000 cases. The clinic, with consultations, routine examinations, and the like, handles a further 3,000.

1/ From the booklet "Grimsby, the World's Premier Fishing Port", published by ED. J. Burrow and Co., Ltd., Cheltenham and London.

2.13 Shipbuilding

There is one trawler-building yard at Grimsby. Most of the trawlers have been built at larger yards farther up the Humber. Seiners are usually supplied from Scottish or Danish yards, though one yard in the adjoining county is now turning out several vessels.

2.14 Ship repairing

Most large fishing vessel owners have their own workshops to provide full hull and engine repair facilities. Smaller owners often link up with one of these owners for maintenance, and there are, in addition, three private companies which can offer similar services. Slipways and a dry dock are provided in the Fish Docks by the port authority.

2.15 Gear supplies

All large vessel owners braid their own nets. Private companies exist to supply demands of smaller owners. One very large gear supplier has a considerable worldwide export business.

Most of the twine used in the port is made by Grimsby Cordage Company which has close associations with some vessel owners. This company produces half the hard fiber twines used in the United Kingdom.

Two companies make ropes in the port. Others making them inland have supply stores or agents in the port. All wire ropes come from outside. The manufacturers have branches or agencies on the Fish Docks.

Most of the trawl boards and many floats and bobbins are produced locally by private companies which specialize in their manufacture.

2.16 Navigational equipment

All the principal wireless, radar, echo sounder, and gyro compass manufacturers have supply and maintenance depots on or near the Fish Docks. The equipment is made in factories some distance from Grimsby.

2.17 Departure arrangements

After landing, trawlers are either iced at their berths, or towed to one of nine icing points. They are then towed to fueling depots and finally put onto a departure quay where they are provisioned, geared and got ready for sea again. Minor repairs are also carried out on the quay. All this work is done by shore gangs, except in the case of seiners. Crews rejoin

their vessels often within minutes of sailing times.

The minimum time in dock for small trawlers is 48 hours after arrival and for large trawlers 72 hours. This results from an agreement between vessel owners and fishermen's unions.

2.18 Training

There is a Grimsby College of Further Education with a Nautical Department which trains fishermen. Practical and theoretical teaching is offered. The Fishing Vessel Owners' Association operates a Fishermen's Training Scheme in conjunction with the College to encourage new entrants into the industry and to provide for advancement. A short pre-sea training course is offered to newcomers. Up-grading courses are available to selected personnel in all capacities, whether deck or engine-room crews. Finally, preparation is given to enable men to obtain Ministry of Transport certificates of competency, viz., skipper, second hand, second hand special. Training for certificates demanded by marine insurers from seiner deck and engine-room staffs is also given. Special instruction is provided for staffs of port wholesale fish merchants as required.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

The water level in the dock is kept at an artifical level by means of the lock gates. That means that they open only at or near high-water times. Fishing vessels arriving outside at these times - and the majority of them do - anchor in the river about a mile from the entrance. Here they are given an order of entry into the dock from the tug operated by the vessel owners.

On going through the lock pits the dock master calls a position of berthing to each vessel. The berthing order follows a plan laid down by the Fishing Owners' Association which must be accepted by the dock authority.

For berthing, the fleet is split into four sections: trawlers from distant waters; from middle waters; from near waters; and seiners. A part of the quay is reserved for each section (see plan). Within each section British vessels are berthed ahead of foreign vessels, with minor exceptions. When there is sufficient room vessels are berthed alongside; otherwise a little overlapping occurs in the trawler sections (see plan). Immediately vessels are tied up, the crews are permitted to go home.

Shore labor, known locally as "lumpers" is engaged to rig the vessels for landing and for the subsequent work. All lumpers are in a labor pool and they are allocated in accordance with an arrangement laid down by the Fishing Vessel Owners' Association which is to be accepted by the labor pool management. Landings commence at midnight for most distant water trawlers, 0300 hours for middle water trawlers, and 0530 for the rest of the fleet.

Lumpers pack fish and ice from the fish hold into cane landing baskets. They are winched out of the trawler and dragged into the market, where the contents are shot out onto sorting tables. Sorting into variety and some sizing is done, and the catch is weighed in aluminum display boxes. These can be stacked five high and are left in this position until sales time, except that fish sold under contract is often removed during the night.

Landings are generally finished by 0730 hours in the distant water section and by 0830 in the near water section. Inshore vessels are permitted to land their own catches.

2. Organization of Sales

Fish sold under contract is a fairly recent innovation and contract sale is limited to the distant water catch. Even here cod is often the only variety concerned. In 1961 the maximum amount of cod which was taken under contract on any one day did not exceed 17 percent of the distant water cod landing.

All the rest of the fish is auctioned.

Each vessel-owning firm has its own salesman or salesmen. There are, in addition, free-lance salesmen who can be employed if required. A salesman generally concentrates on selling one particular variety or group of fish rather than the whole of a particular catch. Thus on a distant water trawler it is not unusual to find four salesmen, one selling cod, one haddock, one flat fish, and one coarse varieties. The auction commences at 0730 hours at the distant water section with the first arrival. It proceeds through the market until it finishes with the smallest boats. When one salesman has finished at the first vessel, a salesman starts selling the same variety on the next vessel, and so on. Salesmen may still be selling other varieties on the first vessel. Thus a fish merchant is able to follow sales of one variety or group right through the market. If he needs other varieties he has other members of his staff to follow the sales too.

Bidding starts in an ascending auction, and goes up to five boxes, depending on how high they are stacked. Bids are made per box of 140 lb or per half-box of expensive varieties. The successful bidder is entitled to take as many boxes as he likes at that figure. If he buys more than the number in one stack he expects a reduction on the price bid. This reduction is the subject of an after-sales private agreement between buyer and seller.

The salesman, having arrived at a figure from one buyer, invites other buyers at the same figure. If there are no more buyers, he might introduce a Dutch auction (descending auction) for a while, but when he appreciates he might do better by an ascending auction again he reverts to this system.

A normal day's supply is generally sold in one hour and a half. Even when a "big day" of 1,000 tons is experienced, sales are over within two and a half hours. This speed is necessary in order to give merchants time to prepare orders for the first daily fish train.

The salesmen return to the vessel owners' office immediately after the sales and work quickly to arrive at the gross value of a particular catch. This figure, which is used as part of the system for paying crews, is generally with the vessel owners' cashier by 1130 hours. Within another hour most crews will have been paid.

The salesmen then prepare a bill for each buyer. These bills are kept for a full week, being added to daily. Each buyer has a box in a special room inside the Fish Merchants' Association building, and every Thursday his bills are placed in the box by vessel owners. Settlement of account must be made by the following Tuesday.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

The whole of the fish docks and surrounding area is owned by the British Transport Commission, British Transport Docks. They own the slipways, dry docks and some buildings around the dock roads. The latter are let to fish merchants, trawler owners and other dock users. A number of buildings, particularly large ones, are owned by the companies occupying them on lease from the dock authority.

The dock authority makes a number of regulations, conditions and charges concerning the operation of the dock. Some examples are given under Section IV 6.

The Ministry of Transport examine vessels and equipment to enforce safety regulations.

The Fisheries Division of the Ministry of Agriculture and Fisheries collects fish landing statistics and enforces fish and net mesh size regulations.

The Port Health Authority, run by the municipality, is responsible for fish inspection from health aspects, and administration of hygiene regulations on the market, in factories and on board ships.

2. Finance

The costs of harbor constructions, maintenance and improvement are borne by the British Transport Commission. The Commission is under a statutory obligation to pay its own costs and it raises charges for most services it offers.

3. Personnel and Duties

3.1 Port administration

It is difficult to give accurate figures here because the port authority covers commercial as well as fish docks.

3.2 Dock operation

Dock master	1
Berthing masters	7
Lock gates	16
Tugs	38
Slipways	5
Water supply	10
Crane drivers	2
Others	5
Total	84

3.3 Landing and display of catches

This labor is supplied by the National Dock Labour Board which was set up by the Minister of Transport. In the fish docks pool, the number varies according to season, but on the average, about 700 men are available. (The principle of the scheme which brought the Board into being was the decasuali ation of dock labor

3.4 Dock authority market staff

Market control	1 inspector 3 men
Market cleansing	13 men
Checking fish on to trains (afternoons) and receiving returned empty fish boxes (mornings)	150 men
Total	167 men

3.5 Fueling

Coal jetties	8 men
Diesel oil installation	6 men

Heavy oil is brought into the docks in barges and delivered direct into trawlers.

3.6 Quality control

Port health	4 inspectors
Vessel owners' scheme	3 men

3.7 Fish sales

There are 55 fish salesmen. They have duties in addition to selling fish mainly connected with the preparation of merchants' accounts. Some are fishing vessel owners or directors of trawler companies.

4. Common Administrative Services

The Fish Merchants' Association employs about 12 people to look after members' interests. Two special services are provided common to all merchants; a railway bulk transport scheme and market intelligence reports. The reports are issued daily and give merchants a complete buying guide, showing what is being landed in Grimsby today, what is expected tomorrow, and a similar pattern for the other major fishing ports in the U.K.

5. Agreements and Consultative Arrangements

A great deal of organization exists in every section of the industry for joint consultation and special agreements. Trawler owners and fishermen's representatives throughout the country are united in the National Joint Industrial Council for the Fishing Industry. Under this Council, Port Committees have been set up to deal with local problems. Points agreed by the Port Committee include time in dock between trips, and maximum number of hours to be worked at sea. The National Council reaches agreement on wage rates of fishermen.

The Grimsby Exchange Ltd. and the Transport and General Workers Union, Lumpers Section, have a binding agreement on landing arrangements. This includes rates of pay, hours worked, scale of labor to be engaged (depending on the size of the catch) and a schedule of miscellaneous duties, together with rates for the job.

6. Regulations

The regulations relating to the fish docks are laid down by the dock authority and the main ones are:

No fish shall be landed at any place within the harbor, except at the fish landing wharf, unless by permission of the Port Master.

Masters of fishing craft shall clear their nets before coming alongside the landing wharf, and shall remove their craft immediately after the fish has been delivered.

Fish must be removed from the landing wharf on the day of landing, if practicable; and if not, before 0800 hours on the following morning.

Masters of vessels are not allowed, under any circumstances, to pump bilge water, nor discharge ashes, ballast, or refuse into the docks.

No vessels, except fishing craft, are permitted to use the fish docks unless by special permission of the Port Master.

7. Charges

Dock Authority charges are numerous and include:

Dock dues, payable on entry into the fish docks.
3s. 6d. per net register ton for most vessels.
6d. per foot length per week for inshore boats.

Wharfage, 12s. 6d. per ton of fish landed, with certain modifications.
1s. 6d. per ton of ice loaded.

Use of slipways e.g.

a)	British vessel of 110 ft and under: hauling, launching and rent for first day	£9.15.6
	Rent for each subsequent day	£6.10.6
b)	British vessel over 170 ft but not over 180 ft: first day	£29. 6.5
	Each subsequent day	£14. 2.4

Use of No. 3 Graving Dock

	Minimum charge first day	£30. 9.0
	Each subsequent day	£19. 0.8

There are concessions when four or more vessels are docked at the same time.

Towage within the fish docks

Examples.	From No. 1 to No. 2 fish dock	£2. 3. 8
	From No. 2 to No. 3 fish dock	£3. 5. 7
	From roads to No. 2 fish dock	£7.12.11
	From roads to No. 3 fish dock	£11. 9. 4

Fresh water

For vessels boilers and fish room washing
Approximately £1.6.6 per 1000 gallons 1/

For drinking purposes on fishing vessels
Approximately £1.8.8 per 1000 gallons

(The scale goes as low as 50 gallons for which a charge of 2s.2½d. is made.)

Use of cranes

5-ton crane 9s.6¼d. per ton, with a minimum of £1.19.8 3/4d. per lift.
15-ton crane, items over 10 tons, 12s.9d. per ton, with a minimum of £2.7.8d. per lift.

1/ Imperial gallon = 4½ liters

ANNEX

The Grimsby Fishing Vessel Owners' Association

1. Every fishing vessel owner is a member of the Grimsby Fishing Vessel Owners' Association. This association is a non-profitmaking organization responsible for:

   a) The direction of policy matters affecting conduct of the catching side of the Fishing Industry at the port.

   b) Negotiations with Ministries, Trade Unions, Docks and local authorities and other bodies on behalf of its members.

   c) The provision of such port services as its members require and which can be advantageously centralized under the administration through one organization. This responsibility is undertaken through its trading companies, The Grimsby Exchange Limited and the Grimsby Salvage and Towing Company Limited.

2. Under the provisions of paragraph 1 (c) it

   a) Provides the following equipment for use in landing operations:

      Landing and weighing baskets;

      Ten-stone aluminum boxes into which the fish is placed for sale;

      Weighing machines;

      Electric winches used to hoist baskets of fish from the hold.

      During peak periods it is not uncommon for 20,000 to 25,000 ten-stone aluminum boxes to be in use at one time. These are washed and sterilized by a permanent steam washing plant specially designed for the port.

   b) Provides labor for trimming ice and washing fishroom boards and putting boards below in the trawlers' fishrooms.

   c) Controls the coaling of all fishing vessels at the port and is itself responsible for the direct purchase of approximately 70 percent of the coal used. In addition, is responsible for the provision of fuel oil to fishing vessels.

   d) Administers the Fishermen's Training Scheme.

   e) Provides the launch and tug service necessary to control the entry of fishing vessels into the dock, the service between the Port and fishing vessels lying in the River, and the assistance of larger trawlers into dock.

f) Provides a coopering service to Fishing Vessel Owners.

(This is printed with acknowledgments to Mr. T. Cooper, A.C.C.S., Secretary of the Grimsby Fishing Vessel Owners' Association).

HAVANA

The Havana fish market is supplied by Havana boats which make 18 to 20 day trips into the Gulf of Mexico and the Caribbean Sea. The Market is also supplied by fishermen's co-operatives from elsewhere in Cuba. The Market serves Havana and neighbouring districts. The fishing fleet is being developed for increased distant-water operations. The Cuban fishing industry is controlled by the Government. Fishing craft belong to fishermen's co-operatives and operate according to co-operative regulations. The fish market and public markets in Havana and nearby cities are under Government control and management. Beside private shops, there are people's stores and people's fish shops. There is no auction. The Government allocates quotas at fixed prices to producers and consumers. Sales to private wholesalers are not allowed.

Fig. XI

FISH TERMINAL OF

HAVANA

CUBA

HAVANA - - - - - CUBA

I. GENERAL

1. Location

Havana (population: 660,000), capital of Cuba, is on the northwest coast of the island on the Straits of Florida (Gulf of Mexico).

2. Types of Fishing Vessels Served

The Havana fleet consists of diesel-powered fishing boats which store fish with refrigerators or which keep the catch alive in fish wells.

3. Species of Fish

Snappers (pargos), groupers (chernas) and allied species.

4. Fishing Areas from which Fish is Landed

The boats operate over medium distances in the Gulf of Mexico and the Caribbean Sea. Fishing trips generally last 18 to 25 days or longer.

5. Marketing Areas to which Fish is Shipped

Havana and neighboring municipal districts.

6. Marketing Methods

In Cuba all markets are nationalized. There is no auction. The prices paid to the fishermen and the selling prices to the public are fixed officially.

7. Market Authorities and Users

7.1 Market authority

Departamento de Pesca del Instituto Nacional de la Reforma Agraria (The Fisheries Department of the National Agrarian Reform Institute).

7.2 Users

Suppliers: Cuban fishing craft. Fishery products are also delivered overland from the fishermen's co-operatives elsewhere in the country.

Buyers: Institutions and retailers under Government control and regulation. All Cuban Government services, including public markets, utilize this terminal.

8. Statistics

8.1 Fishing fleet

Fishing craft landing directly at the Fish Terminal (at the end of 1961):

44 boats with refrigeration plants
7 boats with live-fish wells.

Crew is usually 10 to 15 men.

Inshore fishing boats do not land catches at the fish market, but consign them to their respective fishermen's co-operatives.

The Cuban fishing fleet is being organized for operation in distant waters, with modern, larger-tonnage boats equipped with gear for large-scale production. The fleet will include, among other types of boats, trawlers, seiners and longliners for catching commercially valuable pelagic species, such as tuna, albacore, bonito, sardine and other deep-sea species.

8.2 Quantities and value of landings

Quantities and values of fish and shellfish received at the fish terminal in Havana from January to December 1961 are as follows:

Month	By sea	By land	Total	Total value (Cu $ 1/)
	Metric tons			
January	250.1	863.7	1 113.8	455 936
February	365.0	688.0	1 953.0	455 659
March	417.4	616.8	1 034.2	475 562
April	258.6	361.5	620.1	247 619
May	406.0	488.1	894.1	345 520
June	330.1	614.1	944.2	413 265
July	203.8	426.7	630.5	281 715
August	278.6	366.7	645.3	268 711
September	424.8	591.22	1 016.0	372 742
October	567.9	565.6	1 133.5	420 032
November 2/				
December 2/				
Annual total 2/				

1/ 1 Cu $ = 1 US $

2/ Supplementary data for completion have been requested

8.3 Disposition of landings

Fish is sold fresh, chilled or frozen at markets in Havana and the neighboring municipal districts.

8.4 Fishing enterprises

The Cuban fishing craft belong to the fishermen's co-operatives and operate according to the rules and regulations of the co-operatives. Such co-operatives are set up throughout the maritime zones of the Cuban archipelago to supply the canning industry or the centers for fresh fish consumption in the various regions of the country.

II. LAYOUT AND FACILITIES

1. Plan and Specifications

The Fish Terminal is located on the Havana waterfront. Figure XI shows the layout.

2. Facilities

2.1 Selling area

In Cuba, selling by auction or in any other way to private wholesale buyers is not allowed. Consequently there is no auction hall.

2.2 Processors

There is a fishmeal and fish oil plant which has an average capacity of 5.5 metric tons of fishmeal per day.

Fish waste and low-grade fish are used to manufacture meal for animal feed and to extract the oil for industrial use, especially in making paints and varnishes, soap, oleo-margarine and other fats.

There is room for installing a salting plant, but for the moment, fish is not salted in any way, either dry or in brine.

2.3 Ice plants

Block ice plants: 690 blocks every 24 hours, representing an average production of 103 metric tons per day. The chemical used is calcium chloride. The ice depot has a garage capacity of 900 tons. Flake-ice plant: 12 tons capacity per day.

2.4 Cold storage space

The Fish Terminal has the following equipment:

Four air blast freezers which operate at a temperature of -30 to -40° F. Air circulates in the tunnels at an average of 900 m^3 per minute. Daily capacity (24 hours) is 50 metric tons.

There is a glazing room.

Three cold-storage depots with the capacity for 900 tons: temperature +10° F to -10° F. Each room has two diffusers.

Two store-rooms for fresh fish. Capacity 950 tons, temperature 30° F.

Two air radiators to keep the temperature cool in the intervening space.

2.5 Containers

Wooden boxes holding an average of 75 lb (34 kg) of fresh fish are used and renewed as required, the usual size being 42 x 47 x 27 cm. Equipment is available for cleaning the boxes. The empties are returned by the users.

2.6 Packing halls

There are several packing rooms in the premises, fitted out with the necessary facilities and equipment for proper hygienic packing.

III. SALES ORGANIZATION

Under the system established by the Cuban Government, no selling by auction or in any other way to private wholesale buyers is allowed for commercial dealing or resale. Distribution quotas are fixed for institutions and retail buyers, as dictated by consumption demand, under Government control and regulations. All markets are nationalized. The prices to fishermen and for selling to the public are fixed officially.

A central market and smaller markets in the various districts of the capital and nearby towns are under Government control and management. At these markets fish is retailed to the public in regular, and sometimes limited, quantities, so that it is fairly shared among the people.

District stores which sell meat are equipped to handle fish and shellfish, so that they can be procured more easily. There are also People's stores and People's fish shops as well as private shops.

Retail selling is controlled as regards prices and the quantity allowed to each customer.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

All matters connected with fish, including the marketing of fresh products, are a duty of the Fisheries Department of the National Agrarian Reform Institute. This Department has different sections, the Fish Terminal in Havana being one of them.

2. Personnel and Duties

A total of 111 men work at this Fish Terminal as follows:

Administration	21
Machine	15
Ice-making plant	10
Transport	10
Doorkeepers	4
Distribution	51
Total	111

(Necessary information to complete this Section has been requested.)

HIRTSHALS

Hirtshals is an artificial harbor built on the open coast which the strong Danish fisheries development has made an important port and market.

Catching and selling methods are based on the same principles used at Esbjerg. Although fishing for reduction is more important at Esbjerg, an average of 60 percent of Hirtshals' landings are reduced.

Like Esbjerg, Hirtshals depends greatly on exports; not of flatfish, but of herring. Swedish boats land considerable herring for auction, of which a substantial part is exported.

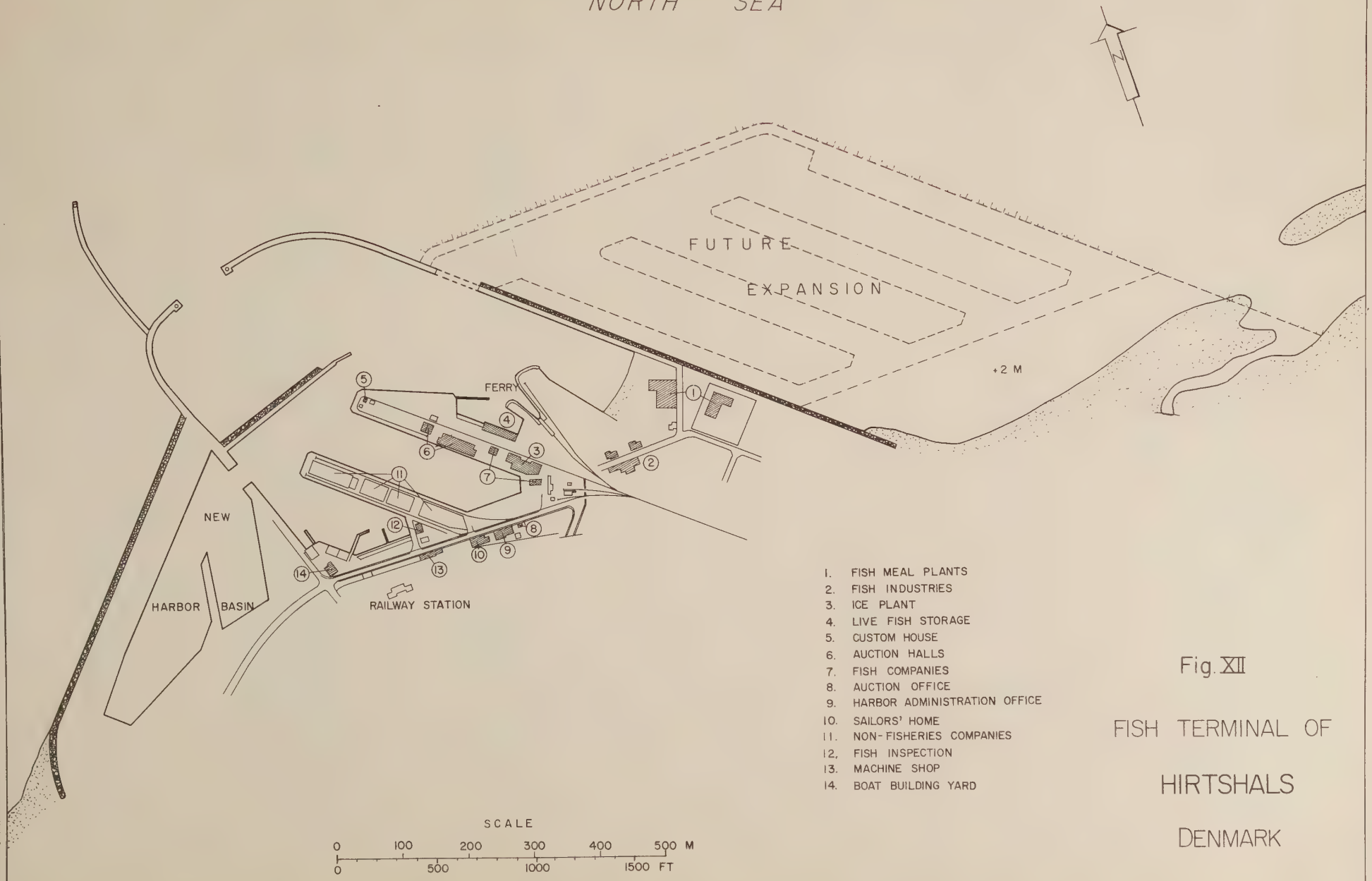

Fig. XII

FISH TERMINAL OF

HIRTSHALS

DENMARK

HIRTSHALS - - - - - DENMARK

I. GENERAL

1. Location

Hirtshals (population: 5,500) is on the northwest coast of Jutland. The harbor is artificial, built on the open coast, with direct access to the Skagerrak and the North Sea.

2. Types of Fishing Vessels Served

Motorized steel cutters above 50 gross tons, mainly used for herring fishing in the northern part of the North Sea along the Norwegian coast.

Motorized wooden cutters above 15 gross tons, mainly fishing in the Skagerrak and during summer in the North Sea.

Motorized wooden cutters between 5 and 15 gross tons, fishing near the coast.

Wooden boats below 5 gross tons for fishing near the harbor.

3. Species of Fish

Fish for fresh consumption: herring, mackerel, whiting, cod, plaice.

Fish for production of fishmeal and fish oil: herring, sandeel, whiting.

4. Fishing Areas from which Fish is Landed

Fishing is carried out all over the Skagerrak. In recent years the fishing has been extended to great parts of the North Sea (herring fishing) in winter; in spring along the Norwegian coast; during summer up to the Shetland Islands, the Orkneys and Fladen. In the southern North Sea the fishing is more scattered, but most fishing is done in the eastern part of Dogger Bank.

5. Marketing Areas to which Fish is Shipped

About one-fourth of the landings is used for the home market. Most of the rest is sold to export markets in Europe and to a lesser extent to the U.S.A. and other overseas markets.

6. Marketing Methods

The fish for fresh consumption, for processing, and for reduction is sold exclusively through voluntary public auction.

7. Market Authorities and Users

7.1 Market authority

Hirtshals fish harbor was built and is administered by the Danish Government. Construction started in 1919 and finished in 1930.

7.2 Users

Suppliers: Shipowners.
Imports, mainly herring, landed by Swedish fishermen; and, in part, mackerel landed by Norwegian fishermen.

Buyers:
Wholesale trade, processing industry (canning, filleting, curing, freezing, smoking), fishmeal and fodder industry, retail trade.

8. Statistics

8.1 Fishing fleet

In 1960 the total fishing fleet registered at Hirtshals numbered 215 vessels with a total gross tonnage of 7,570 and total horsepower of 26,263; the value was 40 million crowns 1/. The breakdown follows:

Steel cutters: 37
gross tonnage: 80 to 135, Total: 3,761
horsepower: 280 to 350, Total: 11,188

Wooden cutters above 15 gross tons: 110
gross tonnage: 15 to 80 (1 of 295 t)
Total: 3,449
horsepower: 90 to 280 (1 of 500 hp),
Total: 13,865

Wooden cutters between 5 and 15 gross tons: 27
gross tonnage: 5 to 15, Total: 264
horsepower: 35 on average, Total: 932

1/ 6.907 Danish crowns (100 øre) = 1 US $

Wooden vessels below 5 gross tons (with or without motor):41
gross tonnage: 97 (total)
horsepower: 11 on average of 26 boats with motor.

Of the boats above five gross tons, 73.5 percent were built in 1936 or in following years. More than 50 percent have been built since 1946.

8.2 Number of trips

Besides vessels registered at Hirtshals, a considerable number of vessels from the rest of Denmark land their catches from the Skagerrak at Hirtshals. Hirtshals is also used to a great extent as a landing place for foreign craft which fish the Skagerrak and North Sea.

The annual average number of trips at Hirtshals by Danish and foreign vessels from 1958 to 1960 was 26,508. The monthly breakdown follows:

Month	Annual average, 1958-60			Percentage of Total		
	Danish	Foreign	Danish and Foreign	Danish	Foreign	Danish and Foreign
January	1 888	268	2 156	8.0	8.8	8.1
February	1 620	255	1 875	6.9	8.4	7.1
March	2 570	393	2 963	10.9	13.0	11.2
April	1 495	167	1 662	6.4	5.5	6.3
May	2 129	150	2 279	9.1	4.9	8.6
June	1 948	77	2 025	8.3	2.5	7.6
July	2 077	189	2 266	8.8	6.2	8.5
August	1 702	279	1 981	7.3	9.2	7.5
September	1 920	436	2 356	8.2	14.4	8.9
October	2 189	274	2 463	9.3	9.1	9.3
November	2 174	336	2 510	9.3	11.1	9.5
December	1 763	209	1 972	7.5	6.9	7.4
Annual Total	23 475	3 033	26 508	100.0	100.0	100.0

8.3 Quantities and value of landings

Quantity and value of total landings directly from the fishing grounds by Danish and foreign vessels annually averaged 98 million kg and 42 million Danish crowns from 1958 to 1960. Herring represented about 70 percent of the total quantity and about 60 percent of the total value of fish landed by Danish fishermen. More than 90 percent of the quantity and value of the catches landed by foreign fishermen were herring and mackerel.

The distribution of total landings by month was:

Month	Annual average, 1958-1960		Percentage of Total	
	(1,000 kg)	(1,000 kr)	Quantity	Value
January	10 398	4 266	10.6	10.0
February	6 711	3 096	6.8	7.3
March	9 564	4 194	9.7	9.9
April	5 642	1 938	5.7	4.6
May	7 901	2 419	8.0	5.7
June	7 792	2 385	7.9	5.6
July	9 521	3 449	9.7	8.1
August	9 044	3 627	9.2	8.5
September	10 462	4 836	10.6	11.4
October	8 340	4 303	8.5	10.1
November	7 083	4 652	7.2	11.0
December	6 017	3 297	6.1	7.8
Annual Total	98 475	42 462	100.0	100.0

Quantities and value of landings at Hirtshals may be broken down as follows:

1958-1960 average by Danes and foreigners:
98 million kg. 42 million kr.
1958-1960 average by Danes including Hirtshals:
74 million kg. 27 million kr.
1958-1960 average by Danes excluding Hirtshals:
24 million kg. 8 million kr.
1958-1960 average by foreigners:
25 million kg. 15 million kr.

In addition, small quantities are brought to Hirtshals by train and truck.

8.4 Disposition of landings

It is not exactly known how much of the catch is sold as fresh, for processing and for reduction, but the division of the average catch in 1958-1960 (about 98 million kg) could be estimated as follows:

As fresh	35 percent
For processing	5 percent
For reduction	60 percent

8.5 Users (1959)

8.5.1 Sellers

There are 630 fishermen engaged permanently and 20 fishermen occasionally engaged in the fishery. Almost all of them are members of Hirtshals Fisheries Association. This is affiliated with the West Jutland Fisheries Association, one of the two chief organizations in Denmark. The West Jutland Fisheries Association concentrates particularly on the interests of the North Sea fishery. The other - the Danish Fisheries Association - especially takes care of the interests of the fishery within Skagen and in the fjords.

8.5.2 Buyers

Wholesalers:

Number	Size of assessed revenue (crowns) 1/
1	0 to 2 999
-	3 000 to 3 999
-	4 000 to 5 999
-	6 000 to 7 999
-	8 000 to 9 999
2	10 000 to 14 999
-	15 000 to 19 999
6	20 000 to 29 999
5	30 000 to 49 999
4	50 000 and more
Total 18	

Most wholesalers are members of the special association - Hirtshals Fish Exporter Association - which is affiliated to Denmark's Fish Trade and Sea Fishery Association.

Retailers:

With stationary shops	1
With mobile shops	9

Some of them are members of Hjørring and nvirons' Fish Retailer Association which is affiliated to the Central Organization of Fishmongers in Denmark.

1/ Size of income on which the wholesalers concerned have to pay tax.

Processors:

For canned products	1
For cured products	15
For filleting	9
Fishmeal plants	3
Others	4
Total	32

The majority of the processors are members of the local association which is affiliated to nation-wide associations.

II. LAYOUT AND FACILITIES

1. Plan and Specifications

The total land area of Hirtshals fishing harbor is 250,000 m^2, of which 18,627 m^2 are used for various buildings, not including the projected enlargement. Figure XII shows the over-all plan and layout of the fish market.

2. Facilities

2.1 Selling area

There are two auction halls.

Hall I: Length 53 m, Breadth 13 m
Area 690 m^2
Wall material: wood
Roof material: eternit (compressed asbestos)
Floor material: concrete
Built: 1930
Capacity: 90 tons fish.

Hall II: Length 100 m, Breadth 11 m
Area 1,100 m^2
Wall material: stone and wood
Roof material: wood
Floor material: reinforced concrete
Built: 1951, extended 1959-1960
Capacity: 280 tons fish.

2.2 Merchants' premises

There are 18 fish storehouses, 8 of them attached to auction hall I. Total floor area is about 970 m^2. The main part of the storehouses are brick. A few are built of wood.

2.3 Processors

In Hirtshals there are 9 fillet-plants, 16 factories processing canned and half-canned goods and 3 fishmeal plants. There are also four plants engaged in other kinds of processing

These plants get most of their raw material from the catch landed directly at Hirtshals. A limited supply of fish comes by train and truck.

2.4 Ice plants

There are three ice plants owned by private firms. Maximum ice production per 24 hours is 255 tons.

2.5 Cold storage space

There are three cold storage plants which can freeze to -20° to -25° C. Total floorage is 1,300 m^2. Total capacity of frozen fish is about 1,475 tons.

There are also ten cold stores which can freeze to -2° to -10° C. Total floorage is estimated at 310 m^2. The capacity is about 200 tons.

2.6 Landing equipment

Tides: The average difference between mean high and mean low tide at Hirtshals is about 0.3 m.

Quays: The length of the quays is about 2,700 m. About 570 m are used for discharging, about 30 m for loading supplies, and about 2,100 m as a landing-stage.

Efforts have been started to extend the harbor eastward, as shown in the plan, which means an extension of the quay of about 3,000 m, according to provisional calculations.

Discharging facilities: It is possible to discharge simultaneously about 15 vessels with fish for consumption and 7 with fish for reduction.

Fishermen in the herring, mackerel and shrimp fisheries take boxes with them on their boats and themselves unload the catch in these. Fishermen in other types of fisheries do not take boxes. Such cargoes are kept in bulk in the holds and it is not until the vessels are alongside quay that the fish - unloaded by the fishermen - is put into boxes.

Average discharging rate per hour per vessel is 9,000 kg.

Fish for reduction is unloaded by roller tracks and conveyor belts directly into trucks. There are seven roller tracks and conveyor belts. The maximum performance of each is about 15,000 kg per hour.

The harbor has a crane which can lift ten tons.

2.7 Containers

Fishermen who take boxes aboard keep the catch in these boxes with ice. Each box of herring and mackerel contains 30 to 40 kg. Shrimp boxes contain about 20 kg each.

For the time being, the price per box is 420 øre. This amount is paid by the fishermen via the auction.

The fish are set up in these boxes for sale. Buyers take their goods in the boxes to their storehouses by trucks. Normally the fish are forwarded in the same boxes after a fresh portion of ice has been added. Via the auction, buyers pay sellers 200 øre per box.

Catch kept in bulk in the holds with ice is put into boxes on landing. The fishermen pay for these boxes. If buyers want to keep the boxes, they must pay for them. Otherwise, the boxes can be returned to the auction after careful cleaning and are ready for use again. Cleaning is done with fresh water without disinfectant from a special drilling under a pressure of four atmospheres.

2.8 Internal transport equipment

Fishlifts become more and more common in the auction halls and the storehouses. Conveyors and fishlifts are to a great extent also used in the different private plants, e.g. filleting-plants, canneries, and fishmeal factories.

2.9 Sorting and weighing

Herring, mackerel and shrimp are sorted into boxes by the fishermen while at sea. The boxes are controlled and weighed before being set up in the auction hall by the auction staff.

The remaining sorts of fish, kept in holds at sea with ice, are sorted into boxes and weighed by the auction staff before sale in the hall.

2.10 Fresh water and power supply

Water is furnished by the local waterworks to the halls and other rooms, which are also supplied with electricity. Gas in bottles is also supplied.

2.11 Transport

A railway system connects the harbor with the station. The railway, privately owned, connects the town of Hjørring with the Danish State Railways. All roads and open spaces attached to the harbor are paved with asphalt.

Those fish products not carried away by train are loaded in big modern refrigerator vans. There is a regular service between the harbor and the various markets within Denmark and in other countries.

2.12 Supply and repair

Private firms supply the vessels with food, liquid fuel, and other such needs. A number of private firms repair boats and motors.

At the moment, the slip system can only receive seven vessels at the same time, but when the projected extension is completed, there will be space for 38 vessels at the same time.

Present rent for the use of the slipway is:

5 crowns per gross ton for 24 hours
6 crowns per gross ton for 48 hours
7 crowns per gross ton for 72 hours
8 crowns per gross ton for a fortnight

2.13 Amenities

The entrance of the harbor is sufficiently buoyed with lights and buoys. There is fog-signal and radio beacon. There is a life-saving station equipped with motorboat and rocket.

A hotel near the harbor caters particularly for fishermen. Near the harbor are several shops where the most common necessities can be bought and there are several banks.

In case of an accident in the harbor, the ambulance service is called from the town. A similar arrangement has been made with the local fire-brigade to inspect the different plants as a preventive measure.

Diving assistance is available.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

Vessels wishing to sell their catch at the auction tie up alongside the auction halls and are served in turn.

The crew unloads the catch from the hold. Auction staff haul the catch to the auction hall, and weigh and sort it by species and size.

Unloading, sorting and setting up start at 0300 hours.

The sorted and weighed fish is placed in rows of piles in the auction halls, normally six boxes in each pile. On each box there is a slip with a printed register letter and number of the vessel. This slip forms the basis of the whole internal procedure in the auction.

Admittance to look over the catch is unrestricted. Between the time the fish is set up in the halls and the beginning of the auction, all boxes must be examined by the Fisheries Control of the Danish State, which is under the Ministry of Fisheries. If fish is not fresh, the lots in question get the designation "excluded from sale". To make sure these are excluded, the fish is put away and sprinkled with a conspicuous red color which is not washable.

2. Organization of Sales

The fish auctioneer always fixes the time for holding auction according to previous arrangement with the local associations of fishermen. Usually the auction is held at 0630 and 1500 hours.

Normally the auctioneer starts requesting a bid for the fish and from this basis he tries to make buyers give a still higher bid.

The buyers have pads with slips of paper bearing their initials or marks. They place these slips on the fish boxes they have bought. By this, any misunderstanding is avoided about whether the fish is sold and by whom it was bought.

According to the rules in the regulations (See IV 5) the buyer is bound, on principle, to examine the fish before the auction starts and may theoretically, therefore, only complain of short weight at the time of delivery. In practice most auctioneers, however, receive complaints, until the fish is delivered and removed from the auction room.

Immediately after the auction closes, the buyer is entitled to have the fish he bought handed over.

Normally the fish is sold at the bid obtained by the auctioneer. If the prices are very low because of large supplies the fishermen who has put up the fish for sale may refuse to sell his catch at the price obtainable and may remove it from auction. It is then up to the fisherman to sell the fish independently. He will get no financial compensation from his organization.

There is no minimum-price system in Hirtshals.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

Hirtshals is a state harbor. It was built by the State and is administered by the Department of Hydraulic Engineering, a division of the Ministry of Public Works.

The daily work is under management of a harbormaster who is responsible to the Department of Hydraulic Engineering's district office in Frederikshavn.

The municipal matters are attended to by a harbor and traffic committee of the following three members:

1 representative from the parish council
1 representative from the local fisheries association
1 representative from the town businessmen appointed by the parish council.

The committee co-operates with the harbormaster and the various public institutions which control the harbor.

The quality control is done by the Danish Fishery Control (Ministry of Fisheries).

2. Finance

Through the Department of Hydraulic Engineering, the Ministry of Public Works pays the expenses for construction and maintenance of buildings and for any other market installations.

The Ministry receives the following payments to cover parts of the above expenses:

From sellers:

1) Landing charges (duty for the use of the quay)
2) Charges for using the auction hall
3) Harbor dues for stay in the harbor
4) Water rate
5) Rent of the fishermen's sheds for storing gear
6) Crane rent.

From buyers:

Rent of buildings

3. Personnel and Duties

The following staff are permanently engaged in the harbor and auction:

General administration	24
Workers in the harbor	30
Hall-workers for auction	32
Total	86

4. Common Administrative Services

4.1 Payment of sales

The fishermen who have delivered the fish are entitled to have the accounts settled with the auctioneer immediately after the auction closes. In practice the fishermen can collect the money in the afternoon for fish sold in the morning. According to the regulation, every sale effected by the auction is in cash. The auctioneer is not, however, for this reason, precluded from allowing credit. Credit is given, to a great extent, to the buyers whose financial standings the auctioneer knows very well, but any risk by such credit facilities is to be borne by the auctioneer alone.

At most auctions in Denmark the settlement of the buyers' purchases is arranged in such a way that the buyers settle their accounts with the auctioneer twice a week, e.g. Tuesday and Friday.

In the accounts the auctioneer deducts from fishermen the taxes imposed on the goods and the pierages which are to be paid to the harbor. All goods passing through the harbor have such duties imposed.

Furthermore the auction collects 1.5 parts per thousand for the Fishery Association which is considered as the fishermen's subscription to their trade union.

4.2 Market intelligence

The prices and landings of the most important species are broadcast daily. Since similar information comes from the auctions in other towns, such as Tyborøn, Esbjerg, Skagen, it is possible to get a picture of the prices all over the country.

Besides this, buyers have contact with their customers in the different export markets, so that they are continually informed of the quantities wanted and the prices which could be obtained.

4.3 Weather forecasting

The latest meteorological reports are broadcast repeatedly in the course of 24 hours.

5. Regulations

The "Regulation for sale of fresh fish at voluntary public auction in Hirtshals" dates from 19 July 1956. Its essential points are the same as the Regulation for sale in Esbjerg (see annex under Esbjerg).

6. Charges

Auction charges:	for fish directly from the sea not above 1.25 percent of the selling sum and in addition 85 øre/100 kg as working costs for fish carried by land not above 1.75 percent of the selling sum, including working costs.
Bridge toll:	2 percent of the selling sum.
Hall duty:	0.55 percent of the selling sum.
Harbor dues:	payment for stay in the harbor amounts to 125 øre per net ton a month.
Water rate:	80 øre per m^3.
Crane rent:	10 crowns per ton
Price of new boxes:	420 øre, paid by the fisherman 200 øre, paid by the buyer to the fisherman.
Price of boxes for reduction:	125 øre, paid by the buyer.

HONG KONG

The Fish Marketing Organization, a statutory agency set up by the Hong Kong Government, operates the market, handles turnover and delivers the purchased fish to the retailer's places. The organization not only equips fishing boats, but directly provides the fisherman, at the market, with the basic necessities of life for himself and his family. Normally, fishermen and their families live aboard the boats. In order to facilitate a quick return of boats to the fishing grounds, payment for catches landed at the market can be advanced before auction, with settlement of accounts after auction. Purchasers may buy only if they maintain an adequate deposit with the Fish Marketing Organization. Besides its marketing activities, the Organization provides capital for new boat construction and mechanization, and even looks after the education of fishermen's children.

It is planned that in future the Market may be operated by the fishermen themselves as a co-operative enterprise. Government assistance is needed until the fishermen's situations and training standards will allow such a self-administration.

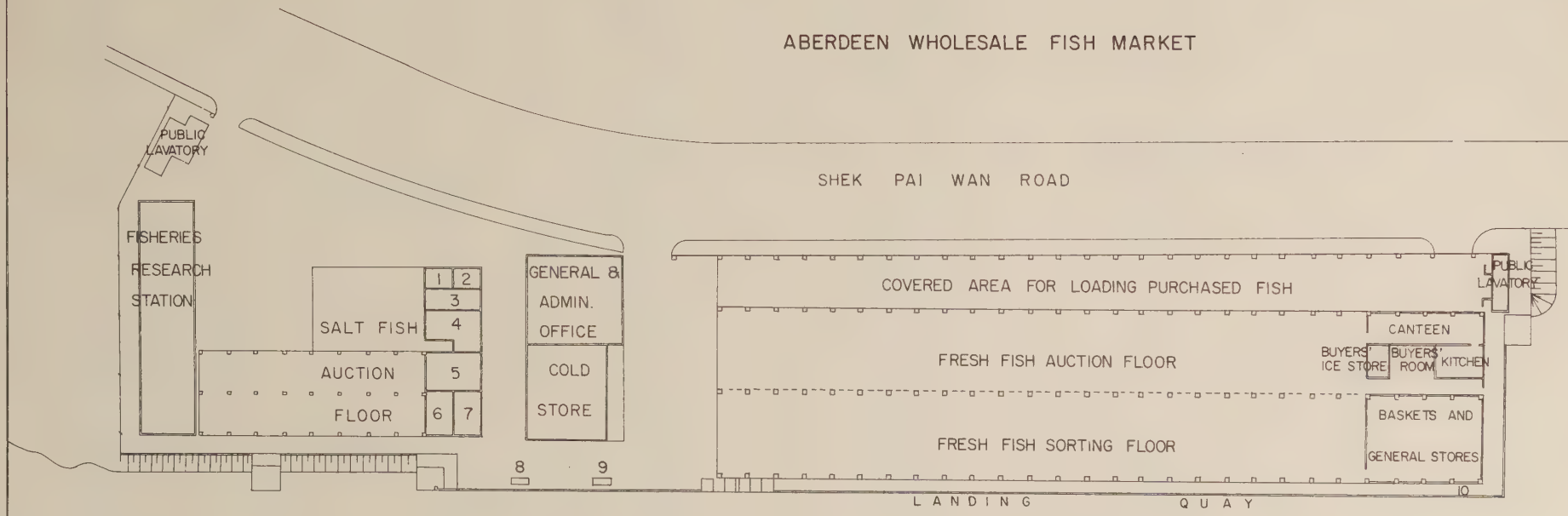

Fig. XIII

FISH TERMINAL OF

HONGKONG

UNITED KINGDOM

1 BUYERS' ROOM
2 STORE
3 STORE
4 FEDERATION OF CO-OP. SOCIETIES MEETING ROOM
5 STORE FOR ICE BLOCKS
6 LUBRICATION OIL STORE
7 ICE SALES OFFICE
8 FUEL OIL SUPPLY POINT
9 ICE-CHIPPING MACHINE
10 FRESH-WATER SUPPLY POINT

SCALE

0 50 100 150 200 250 300 FT

0 10 20 30 40 50 60 70 80 90 100 M

HONG KONG 1/

I. GENERAL

1. Location

Hong Kong (1961 population: 3,133,000), is a British Crown Colony on the south coast of China, consisting of a mainland area and a number of islands. The Colony's main fishing port, Aberdeen, is on the southwest coast of the Island of Hong Kong.

2. Types of Fishing Vessels Served

Company-operated Japanese-type pair-trawlers; merchanized traditional junk pair-trawlers, longliners, purse seiners and gillnetters; traditional sailing junk pair-trawlers, liners, seiners and gillnetters; foreign trawlers, shrimp and prawn-catching beam trawlers (mechanized and wind-driven) of traditional junk design.

3. Species of Fish

Fresh marine fish (round and iced); over 100 species. Salted marine fish (brined at sea by sailing vessels). Dried Marine fish (sun-dried). Fresh shrimps and prawns (iced).

4. Fishing Areas from which Fish is Landed

South China Sea and Gulf of Tonkin. Modern trawlers make round trips averaging 10 or 11 days.

5. Marketing Areas to which Fish is Shipped

Almost exclusively the retail markets are under the control of the Hong Kong

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1/ See also "The Hong Kong Fish Marketing Organisation" in Report on the First FAO-ETAP International Fish Marketing Training Centre, Hong Kong, 11 July to 31 August 1954 (FAO Report No. 404).

Government; but there are several wholesale fish markets, where the catches are landed and sold. There is some export.

6. Marketing Methods

Mainly by auction.

7. Market Authorities and Users

7.1 Market authority

The Hong Kong Fish Marketing Organization administered by a civil servant (the Director of Marketing).

7.2 Users

Suppliers include owner-operated traditional junk-type vessels; company-operated junk-type pair trawlers; foreign trawlers (Japanese-type); privately-owned junk-type fish collectors mainly obtaining their fish from sailing vessels at sea; the Fish Marketing Organization collecting fish and fisheries products and transporting them by sea and land from districts outside. (Fish-collecting centers or depots around the colony, established in the main fishing villages).

Buyers include the retail trade; processing industry (salted and dried marine fish, manufacturing of fish gravy, some filleting for export only and freezing, mainly of shrimps and prawns). All buyers must be registered by the Fish Marketing Organization.

8. Statistics

8.1 Fishing fleet

Liners	872 vessels
Seiners	344 vessels
Trawlers	1 040 vessels
Gillnetters	240 vessels
Collectors	3 vessels

In 1961, 66 percent of marine fish landings in the Colony were catches by mechanized fishing craft; 21 percent by traditional sailing junks, 11 percent by company-operated Japanese-type pair-trawlers and 2 percent by foreign trawlers.

Modern trawlers carry their fish in wooden or light metal fish boxes, stowed in holds. Mechanized junk trawlers and longliners also carry their fish in wooden boxes and part in bamboo baskets. Inshore vessels often carry their fish in circulating sea water tanks built into the vessel.

8.2 Quantities and value of fresh fish landings (1961)

Month	Quantity (tons)	Value (HK $) 1/
January	1 276.89	1 977 349.01
February	1 097.92	1 694 020.89
March	1 676.47	2 195 646.75
April	1 722.20	2 024 065.16
May	1 342.18	1 667 552.19
June	1 000.91	1 286 152.42
July	1 125.93	1 299 086.52
August	1 129.97	1 267 119.34
September	1 007.94	1 384 705.77
October	1 214.86	1 705 431.53
November	1 493.74	1 930 140.27
December	1 611.45	1 986 789.33
Annual total	15 700.46	20 418 059.18

8.3 Quantities and value of salt fish marketed (mainly brined at sea) (1961)

Month	Quantity	Value (HK $) 1/
January	93.15	131 000.83
February	61.60	68 311.00
March	205.00	162 202.56
April	347.94	287 660.27
May	242.41	310 886.81
June	751.07	383 579.34
July	888.67	336 041.29
August	326.33	222 148.06
September	152.90	181 113.57
October	257.28	314 578.43
November	265.62	323 237.22
December	300.40	417 664.47
Annual total	3 892.37	3 138 423.90

1/ Approximately 5.7 HK $ = 1 US $

II. LAYOUT AND FACILITIES

1. Plan and Specifications

The Aberdeen Wholesale Fish Market covers a total area of 103,000 square feet. Figure XIII shows the market layout.

2. Facilities

2.1 Selling area

There is a covered sorting and sales floor and vehicle loading area for:

Fresh fish - Length: 406 ft, Width: 120 ft.
Salt fish - Length: 120 ft, Width: 45 ft.

The fresh fish hall is constructed from brick pillars, steel roof trusses and corrugated asbestos roofing sheets. The seaward side of the hall is used for fish sorting, weighing and documentation, and the landward side for sales and the removal of the fish by vehicles. The salt and dried fish sales floor is a temporary building constructed in wood with asbestos roofing.

2.2 Merchants' premises

Fresh fish buyers and buyers of salt-dried fish are provided with a room for their transactions. These rooms have several telephones.

2.3 Ice

A Federation of Fishermen's Co-operative Societies based in Aberdeen makes sales of block or chipped ice to members at the market. Commercially-owned ice-making plants and cold stores operate in the immediate vicinity of the market.

2.4 Cold storage space

There are two chambers of 115 tons capacity each. One chamber has a temperature of -20° F and the other 30° F. Seldom does any fresh fish remain unsold. The cold storage facilities are used mostly for storing bait for longliners.

2.5 Discharging facilities

Vessels tie up directly at the market waterfront which is 555 ft. long. Discharging is carried out manually by labor supplied by the Fish Marketing Organization. Some fixed electric hoists are available.

2.6 Containers

Split bamboo baskets. The market keeps some 2,000 fresh fish baskets and 1,800 salt/dried fish baskets for daily use in discharging and sales. Fresh fish baskets can contain a maximum of 80 lb and salt/dried fish baskets a maximum of 240 lb. All baskets used are washed several times a day. The Fish Marketing Organization provides baskets for the transport of salt/dried fish to buyers' places of business, whereas buyers of fresh fish provide their own containers for the removal of their purchases. Experiments are now being carried out with the use of aluminum baskets.

2.7 Internal transport equipment

Light and heavy trolleys are used to convey baskets of fish within the market area.

2.8 Water

The market provides facilities for fishermen to take on drinking water at the market waterfront. Only sea water is used for cleaning in the market.

2.9 Fuel

The market has arranged for a private fuel oil company to install and operate fueling facilities for mechanized vessels on the market waterfront. There are two other fuel oil bunkering stations near the market.

2.10 Transport

The Fish Marketing Organization collects and transports fish by sea and land from the main fishing villages to the market and, after auction, provides truck transport for all buyers to convey their purchases to their place of business free of special charge.

2.11 Amenities

Beside the services of marketing and transportation, the market also gives the fishermen the possibility of providing themselves with daily commodities at wholesale prices.

There is a privately-operated canteen for staff, fishermen, and buyers in the market.

A Liaison Officer with two Assistants is employed by the Fish Marketing Organization and attached to the market. The duties of the Liaison Officer are to assist fishermen by discussing operational marketing problems with the Market Manager, to assist fishermen in matters concerning their welfare, to provide help in making out applications to the Fish Marketing Organization for loans (the Organization provides low-interest loans for productive purposes, mostly for mechanization and for building new fishing boats), to assist Co-operative officers in the formation and operation of Fishermen's Co-operative Societies and to attend meetings held by fishermen and provide guidance at such meetings in respect of all matters being discussed.

Quarters for the staff of the market are provided in a building near the market. These quarters are occupied by 28 married staff members and their families and 45 single staff members in dormitories.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

The crew of the fishing vessel removes the fish from the fish holds onto the deck; then the fish is handled by the market laborers.

Unloading is done in succession.

The Fish Marketing Organization provides a separate group of laborers for sorting and weighing fish brought to the market for sale. Sorting according to type, size and quality is carried out on tables specially constructed of reinforced concrete and finished with terrazzo. Weighing fresh fish is done in small lots from about 10 to 60 lb; salt/dried fish is weighed in lots from 100 to 150 lb. At the time of weighing, each lot is documented, giving the name of fishermen, weight, and species of fish. The fisherman himself, or his representative and a representative of the Buyers' Guild are present during weighing. After each lot is weighed, the fish is displayed in rows prior to sale, so that interested buyers can inspect all fish in detail.

2. Organization of Sales

Buyers bid at an ascending auction for each lot displayed for sale. Fish is sold to the highest bidder, but is subject to any reserve price that may have

been placed on a particular lot of fish by the owner. Negotiated sales are permitted in certain cases when processors require large quantities of one type of fish. Three auctions operate simultaneously for fresh fish from 0530 hours to about 1300 hours. Salt/dried fish sales commence and end between 1400 hours and 1600, depending on landings. Fresh fish are also sold on Sundays, but not salt/dried fish.

Sales of catches are arranged on a "first-come-first-served" basis.

The fish is transported after sale to the buyers' place of business in transport provided by the Organization. Within three hours, at maximum, from discharging, the fish is on its way to the buyers' premises.

Payments to a seller are made by the market within an hour after the sale of his catch.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

The Fish Marketing Organization which operates the market is the agency set up by the Hong Kong Government, through which certain controls on landing and wholesale marketing of marine fish are exercised. The Organization is administered by a civil servant, the Director of Marketing, appointed by the Governor of Hong Kong. The Organization is a statutory non-profitmaking concern and was established in 1945 to provide orderly wholesale marketing and transport facilities, thus ensuring that local fishermen obtained fair prices for their catches. In addition to the market at Aberdeen, it operates four other wholesale fish markets in the Colony and provides a variety of other services such as transportation, cheap credit and education for fishermen's children. The Organization has been so planned that, in future, it may be operated by the fishermen themselves as a co-operative enterprise.

The Director of Marketing is also the Commissioner for Co-operative Development and Fisheries and responsible for Fisheries Research and Extension Services.

The retail markets throughout the urban area are under the Sanitary Division of the Urban Services Department. There is no special legislation for quality control of fresh fish, but the market co-operates closely with the Health Inspectors. Fish considered unsuitable for human consumption is sold for fishmeal or fertilizer.

2. Finance

The Fish Marketing Organization is financially self-supporting, deriving its revenue from a six percent commission charged on all sales in its markets. The Organization normally bears the costs of all required capital and recurrent expenditure from its revenue, but has received financial assistance from the British Government and the Hong Kong Government for both capital and recurrent expenditure to extend the scope of its services.

3. Personnel and Duties

The Market employs a total of 137 regular staff and up to about six hourly-paid, daily-paid or weekly-paid workers according to daily or seasonal requirements. The market staff and their duties are:

1 Manager
76 Employees for general administration such as accounts and documentation
44 Regularly-employed laborers and up to about 60 occasional workers (off-loading, sorting, weighing, sales, basket-handling, cleaning)
4 Floor supervisors
9 Auctioneers
1 Liaison officer with 2 assistants.

4. Common Administrative Services

4.1 Payment for sales

The market prepares cash memos for sellers shortly after daily sales commence in the morning. Normally sellers are paid within an hour of the sale of their catches. Calculations are made on the basis of the auction vouchers for each lot made out at the time of weighing.

A fisherman can obtain advances on the catch he brings to auction. Thus he can, while his fish is being auctioned, purchase oil, ice and so on for a quick return to the fishing grounds.

A buyer in the market makes his purchases against a deposit which is replenished from time to time when a market checker informs him that his purchases have exhausted the amount on deposit.

4.2 Market intelligence

The market maintains a variety of statistics and makes this information available on request. Monthly trading reviews are published in local newspapers. Catch statistics are maintained for all vessels landing fish at the market.

4.3 Repayment of loans

Loans made to fishermen from the Organization's own Loan Fund or from any other Loan Fund administered by the Co-operative Development and Fisheries Department are granted subject to repayments being made by the deduction of a percentage from proceeds of sale of the borrower's catch. This percentage, depending on the size and duration of the loan, is normally 15 to 20 percent.

5. Regulations

The Fish Marketing Organization at present operates under emergency legislation which controls the landing, movement and wholesaling of marine fish. Shellfish and marine fish "alive and in water" are specifically excluded. A more permanent ordinance has been enacted, but not yet promulgated, pending the preparation of subsidiary regulations and by-laws.

6. Charges

Six percent commission is charged on all sales in the market, which covers all the services rendered by the Organization.

I J M U I D E N

The IJmuiden Fish Market is managed by the Staatsvissers-havenbedrijf (Government Harbor Authority) under the Ministry of Transport. The organization of landings is not the responsibility of the Market Authority; discharging, sorting and weighing are undertaken by a Dock Labor Company directed by the trawler-owners.

The Market Authority directs a descending auction. The auction has no fixed time, but is in order of arrival of the vessels, normally between 0700 and 1800 hours daily.

There are minimum prices for some species; these are fixed by the Marketing Board for Fish and Fisheries Products under supervision of the Minister for Fisheries. Fish not sold at the minimum price is delivered to fishmeal plants. The difference between the price of fish sold for fishmeal production and the minimum price is borne by the industry without Governmental support. Sellers pay a levy on each box sold for human consumption or canning.

IJmuiden is home port of a large number of fishing craft, mostly small or medium-sized boats fishing the North Sea, or, in a few cases, off Iceland. A great part of the fishing effort concerns herring; however, the herring salted at sea is not auctioned at IJmuiden, but at Katwijk. In spite of this, IJmuiden has an important turnover of fish and herring. Considerable quantities are exported to several foreign countries. Only sole and turbot are sold by weight. Other fish are auctioned in boxes containing approximately 50 kg each.

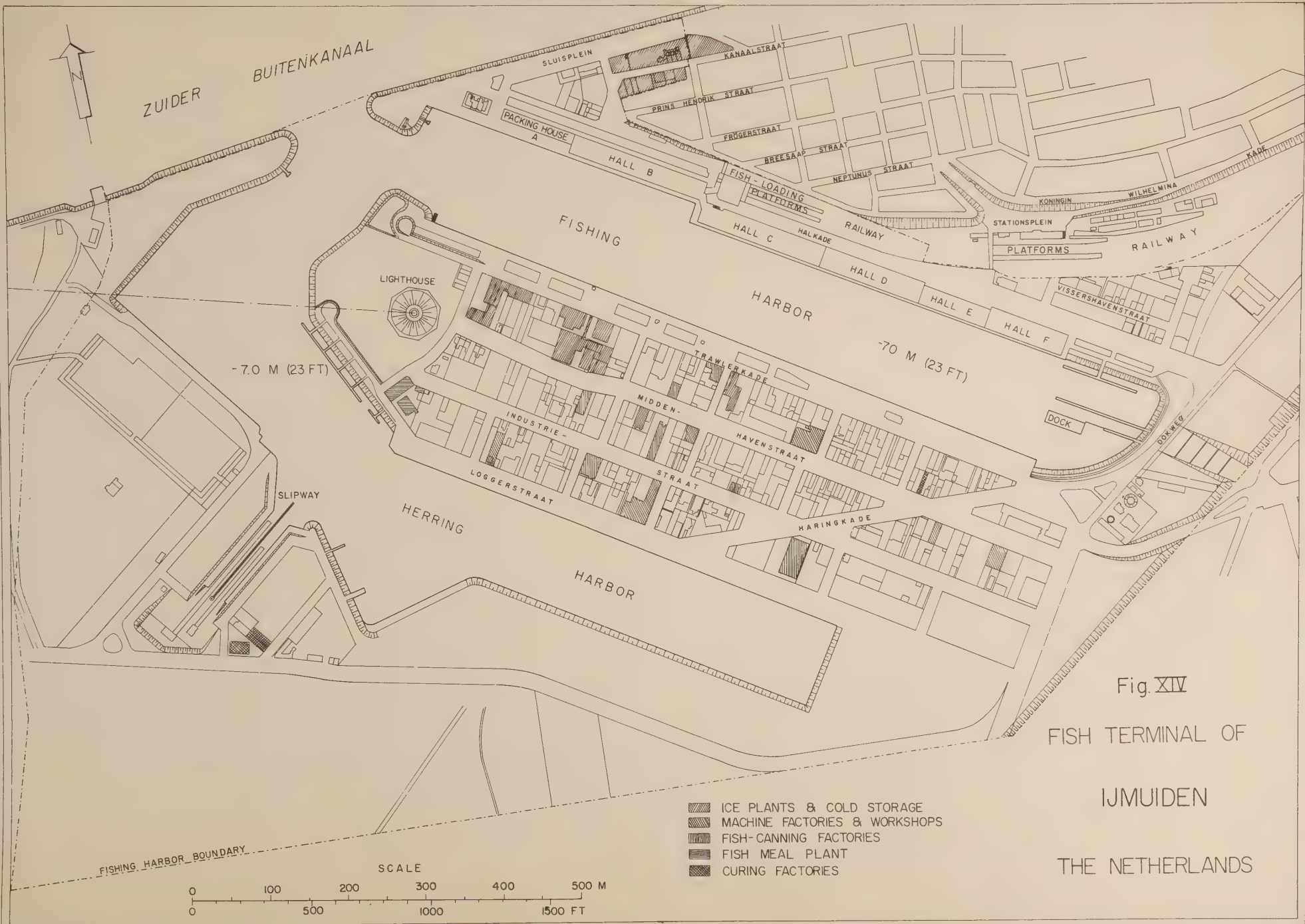


Fig. XIV

FISH TERMINAL OF

IJMUIDEN

THE NETHERLANDS

IJMUIDEN - - - - NETHERLANDS

I. GENERAL

1. Location

IJmuiden (estimated 1954 population: 26,900) is part of the municipality of Velsen (population: 68,000), situated on the North Sea coast, at the mouth of the North Sea Canal, linking Amsterdam with the North Sea (distance to Amsterdam 25 km).

2. Type of Fishing Vessels Served

Motor trawlers

Luggers (herring driftnetters)

Cutters and coastal fishing vessels.

3. Species of Fish

The main species of fish landed are: herring, mackerel, cod, haddock, whiting, coalfish, sole, plaice, and turbot.

4. Fishing Areas from which Fish is Landed

Mainly the North Sea; sometimes Icelandic waters.

5. Marketing Areas to which Fish is Shipped

Shipment is made to the whole area of the Netherlands and to many foreign countries.

6. Marketing Methods

By auction.

7. Market Authorities and Users

7.1 Market authority

Staatsvissershavenbedrijf (Government Fish Harbor Authority), which maintains the market and manages the auction.

7.2 Users

Suppliers: shipowners

Buyers: Wholesalers, processing industry, fishmeal industry.

8. Statistics (1960)

8.1 Fishing fleet

144 trawlers: 50 m (overall length) on an average
47 driftnet luggers: approximately 37 to 43 m (overall length)
370 cutters and coastal fishing vessels: cutters about 25 to 30 m (overall length)

561 Total

8.2 Number of trips

Trawlers	3,188
Driftnet luggers	157 1/
Cutters and coastal fishing vessels	13,471

1/ The number of landings made by driftnet luggers is disproportionately small; this is explained by the fact that salted herring, landed by luggers, is not auctioned in IJmuiden; the auction for salted herring takes place in Katwijk.

8.3 Quantities and value of landings (1960)

Month	Trawlers		Luggers		Cutters and others		Sent by land	
	Quantity kg	Value fl 1/	Quantity kg	Value fl	Quantity kg	Value fl	Quantity kg	Value fl
January	4 558 936	2 616 090	-	-	2 830 126	1 762 904	284 799	166 289
February	5 759 198	3 160 648	-	-	2 031 504	1 886 360	254 924	143 752
March	6 142 593	3 171 789	-	-	1 715 670	2 025 310	5 938	3 206
April	5 766 482	2 445 254	-	-	1 353 198	1 954 267	6 736	7 844
May	5 385 287	1 850 627	-	-	1 855 639	2 962 040	7 670	6 565
June	3 651 469	1 546 446	239 568	71 580	1 970 823	1 909 528	5 615	10 206
July	6 102 155	2 118 452	604 213	175 543	2 006 266	2 094 823	4 081	9 943
August	6 100 559	2 435 357	142 100	46 489	2 604 055	2 201 088	1 052	2 033
September	6 637 343	2 597 235	5 875	2 190	3 571 720	2 697 976	1 565	4 557
October	6 379 516	2 794 034	159 200	69 678	3 445 444	3 015 967	7 194	5 089
November	4 782 368	2 515 966	721 127	312 011	1 530 229	1 958 984	292 580	126 921
December	3 932 539	2 282 974	5 695	2 014	3 349 930	2 256 920	583 279	141 439
Total	64 919 445	29 534 872	1 877 778	679 505	28 255 604	25 826 167	1 455 433	627 844

1/ 3.62 fl = 1 US $

8.4 Disposition of landings

Total landings:	96 598 269 kg
For human consumption:	92 024 400 kg
For fishmeal:	4 483 860 kg

With respect to herring and mackerel, the following approximate proportions of fish for processing purposes out of the landings intended for human consumption are estimated:

Herring: 20 percent for canning, 10 percent for smoking.
Mackerel: 10 percent for canning, 10 percent for smoking.

Most other fish landed is for fresh consumption.

8.5 Users

All owners of fishing vessels are organized in the "Stichting van de Nederlandse Visserij" (Netherlands Fishery Organization).

Most buyers are organized in the "Nederlandse Zeevisgroothandel Vereniging IJmuiden" (Netherlands Fish Wholesalers Organization, IJmuiden).

Buyers and their annual turnover are classified in 1960 as follows, to indicate their importance in the market transactions.

Size of turnover (florins)	Number of firms	Total Turnover (florins)
0 - 10 000	24	74 000
10 000 - 50 000	38	997 000
50 000 - 100 000	16	1 175 000
100 000 - 250 000	32	5 179 000
250 000 - 500 000	14	5 207 000
500 000 - 1 000 000	25	16 984 000
1 000 000 and up	10	26 146 000
Total	159	55 762 000

II. LAYOUT AND FACILITIES

1. Plan and Specifications

Figure XIV shows the layout of IJmuiden harbor.

2. Facilities

2.1 Selling area

Length of the auction hall: 680 m, auction area: 9,664 m^2, made of steel-reinforced concrete in skeleton construction manner and clinker-coated. The halls can handle approximately 600 tons of fish at one time. The auction hall is divided into four parts. Fish-packing compartments are attached to three of these parts.

2.2 Packing facilities

There are two additional buildings which also have fish-packing compartments.

The auction hall has a total of 55 fish-packing compartments inside and 26 outside, built by the Staatsvissershavenbedrijf. There are more packing compartments near the auction hall built by private wholesale firms.

2.3 Processors

IJmuiden has several canning and smoking factories, a fishmeal plant, and an animal food processing factory.

2.4 Ice plants

Four ice-plants with cold storage accommodation are run by private firms.

2.5 Discharging facilities

Tides: Tidal difference is approximately 160 cm.

Quays: Length of quays: 2,737 m, 680 m of this length being along the auction hall.

Unloading: By electric winches. Baskets are drawn to the quay over discharging boards. Unloading, sorting and weighing is done by a trawler-owners' organization.

2.6 Containers

For auctioning purposes, the Staatsvissershavenbedrijf keeps about 12,000 wooden boxes, which each contain 50 kg of fish. The boxes are partly mechanically cleaned, partly by hose, using disinfectants.

2.7 Internal transport equipment

The market area comprises a railway network and a shipping hall managed by the Netherlands Railway Company.

2.8 Power, water, gas

Electricity and water are furnished by the Harbor Authority; gas by the municipal gas works.

2.9 Other services

Bunkering stations for fuel and ship repair shops are run by private firms. The Harbor Authority is manager of two slipways and a floating dry dock.

2.10 Amenities

Two canteens are available to all market users. The Harbor Authority maintains a first-aid post.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

The Harbor Authority assigns fishing vessel berths. The boats are discharged in order of arrival. Discharging begins at 0200 hours.

The fish is discharged, sorted into species, sizes and qualities, and weighed (only soles and turbots) by dock laborers, in the service of a dock labor company, directed by the trawler-owners.

Before the auction begins, all landings are controlled by the sanitary police according to regulations. Fish which is inadequate for human consumption is excluded.

2. Organization of Sales

Sales are carried out by Dutch auction (descending auction) by Harbor Authority employees, in compliance with the Market Regulations. Usually, auction takes place in order of vessel arrival. The auction hours are normally from 0700 to 1800 hours. Iced fish which arrives before 1000 is auctioned during the day. Non-iced fish is accepted for sale until 1800.

All fish is sold by boxes. The boxes are owned by the Harbor Authority. They contain about 50 kg each. Only sole and turbot are sold by weight.

For some species, a minimum price has been fixed by the Marketing Board for Fish and Fishery Products. The quantities of fish which do not obtain the minimum price are delivered to fishmeal plants. The minimum prices are financed by the industry itself without Government financial support. The sellers pay a levy on each box of fish sold for fresh human consumption or for canning. The levy ranges from five to ten percent of the first sales prices. The fishmeal plant pays the price on the basis of the world market price of fish protein. The difference between the fishmeal price and the minimum price will be paid out of the funds from the levies. The whole scheme operates under the jurisdiction of the Fish Marketing Board under the supervision of the Minister for Fisheries.

Fish sold must be collected and removed by the wholesalers from the market immediately after the auction. The auction-boxes must not leave the auction hall, so they may be cleaned the same day by Harbor Authority employees.

Order in the auction-hall is maintained by a special police force in the service of the Harbor Authority.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

The fishing port of IJmuiden, including all water and land installations, is owned by the Staatsvissershavenbedrijf (Government Fish Harbor Authority) under the Ministry of Transport.

2. Finance

The costs of the construction of harbors, water and land installations, and their maintenance are borne by the Harbor Authority. The capital necessary for investments is borrowed from the Government. Interest and amortization is paid by the Harbor Authority to the Government.

The Harbor Authority receives the following payments according to tariffs, fixed by Royal Decree:

> Harbor dues (for vessels not selling fish in the auction), auction charges for supply of water and electricity, charges for using the slipways and the floating dry dock, rent paid for the rented buildings, lease paid for leased ground in the harbor area.

3. Personnel

The Harbor Authority employs 75 persons.

4. Common Administrative Services

The Harbor Authority issues invoices for completed sales which are sent to sellers and buyers. The proceeds from sales are transferred to vessel-owners. Auction charges are deducted from the proceeds. Payment to the Harbor Authority for fish purchased falls due after ten days. The Authority makes security arrangements with the buyers according to the size of their purchases.

5. Auction Charges

Auction charges, both for Dutch and foreign vessels, calculated on a percentage basis of the proceeds, are:

Fresh fish	3 percent
Salted fish in barrels	1 percent
Fish sent directly to fishmeal factories	1.5 percent

K A R A C H I

The Wholesale Fish Market at Karachi Fish Harbor started working in October 1959. Its establishment was preceded by long and thorough planning. At present it is the only modern fishing port and market on the West Pakistan coast. Direct landings from fishing craft form a part of the market's supply. Another important part is brought overland from fishing settlements along the coast. Fish (fresh, dried, or otherwise processed) is not only consumed at Karachi itself, but is also shipped to other West Pakistan districts. Some products are exported.

The Karachi Fishermen's Co-operative Society Limited is entrusted with operating the Market under the supervision of the Government's Central Fisheries Department, with the aid of marketing officers.

This Governmental control was necessary to induce market users to give up traditional handling and selling methods which did not benefit fish quality or fishermen's welfare and did not help increase fish consumption. The problem at Karachi has been not only to educate fishermen to handle fish, but also to free fishermen, through the system of public auction, from their traditional economic dependence on middlemen.

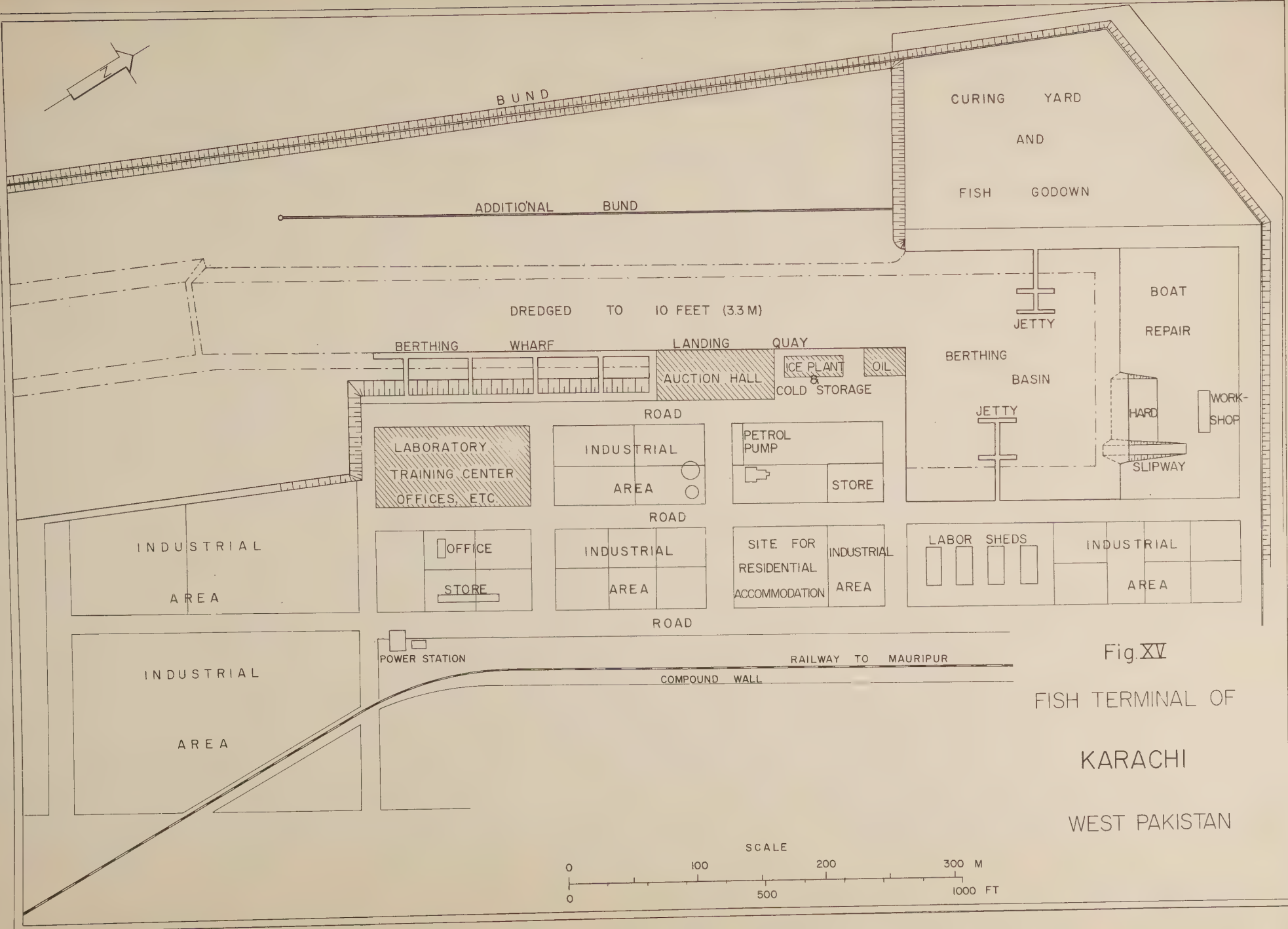


Fig. XV

FISH TERMINAL OF

KARACHI

WEST PAKISTAN

KARACHI - - - - - PAKISTAN

I. GENERAL

1. Location

Karachi (population: 2.2 million), the largest city of Pakistan, is northwest of the river Indus in West Pakistan. The fish harbor is about 3.5 miles from the main commercial harbor entrance.

2. Type of Fishing Vessels Served

Motor fishing trawlers for deep-sea fishing (shrimp trawling only).

Motor fishing launches (gillnetters) for surface and midwater fishing.

"Bedi" sail boats (mainly gillnetters) for surface and mid-water fishing.

"Hora" sailboats, mainly used for fishing with gillnets and beach seines in coastal waters.

"Ekdars", modified dugout canoes, mostly engaged in gillnetting in coastal waters.

"Tonnies", dugout canoes.

3. Species of Fish

Marine fish such as mackerel, sea bream, hilsa, sole fish, new fish, shrimps and freshwater fish from the Indus River.

4. Fishing Areas from which Fish is Landed

At present there is only the Karachi Wholesale Fish Market on the West Pakistan coast between Iran and India, and fish from all fishing settlements on this coast is landed at Karachi Fish Harbor, mostly from the 18 fishing settlements within a 20-mile radius of Karachi.

5. Marketing Areas to which Fish is Shipped

Fresh fish is not only destined for the consuming center of Karachi, but is also shipped to other districts of West Pakistan (distances vary from 50 to 1,200

miles or 4 to 35 hours by rail). Moreover, frozen and canned shrimps are exported to U.S.A. and U.K., frozen and dried fish to India (Bombay), and to other countries in the Middle East, east Africa and east Asia. No fish is shipped from West Pakistan to East Pakistan.

6. Marketing Methods

All fresh and dried fish is principally sold by public auction.

7. Market Authorities and Users

7.1 Market authority

The Karachi Fishermen's Co-operative Society Ltd., has been permitted to manage the fish market under the direct supervision of the Government (Central Fisheries Department).

7.2 Users

Suppliers: Fishing boat owners and other producers of fish, under Martial Law Regulation No. 75, are required to bring all their fish to the Wholesale Fish Market at Karachi.

Buyers: Retailers in the local municipal markets.

Hawkers, who sell fish from door to door.

Ship-chandlers supplying fish and other provisions to hotels and restaurants.

Fish-merchants who ship fresh fish to various districts in West Pakistan.

Processing plants, mostly freezing prawns, partly freezing fish for export to India.

Exporters of dry fish.

8. Statistics

8.1 Fishing fleet

Type	Motor steel	Trawlers teak wood	Motor Launches teak wood	"Bedi" Sail-boats	"Hora" Sail-boats	"Ekdar" Canoes	"Tonni" Canoes
Number	2	111	181	905	840	1 250	
Percentage share of the total supplies	0.01	10	30	20	10	20	10

Note: The two steel motor trawlers were imported from Europe. One is equipped with a fish-processing plant of about one-ton capacity per 24 hours and cold storage of about five-tons capacity.

The breakdown of the motor launches in order of tonnage is as follows:

Under		5 tons	-	26
5	to	15 tons	-	45
15	to	25 tons	-	70
25	to	35 tons	-	27
35	to	40 tons	-	7
40	to	105 tons	-	6
Total				181

The breakdown of the sailing fishing boats is not available due to the impossibility of visiting the numerous fishing settlements.

Only part of the above-mentioned gillnetting motor and sailboats discharge their catches directly at the Karachi fish harbor. All other fishing vessels such as "Bedi", "Horas", "Ekdars", "Tonnies", and a few mechanized launches land their catches in their home ports (fishing settlements) and that fish is brought to Karachi Fish Market by truck or camel. Part of the catch is dried and comes to the Dry Fish Section of the Fish Market. Some dry fish is exported through Karachi as the port for shipment.

8.2 Number of trips

The arrivals of fishing vessels (trawlers and gillnetters) using the Karachi Fish Harbor as their port of operation in 1960-1961 are as follows:

1960	
September	782
October	1 813
November	1 686
December	1 333
1961	
January	1 211
February	900
March	1 104
April	1 577
May	1 963
June	1 179
July	484
August	1 170
Annual total	15 202

The fishing season is normally from September to 15 June. During monsoon season (particularly in June, July and August) fish production decreases and repairs and maintenance of fishing vessels are undertaken.

Normally a fishing trip lasts six to seven days. There are a few small sailboats engaged in creek fishing; they operate daily according to tides and bring their catches the next morning.

8.3 Quantities and value of arrivals

Year and Month	Fresh Fish	Fresh Prawns	Cured and Semi-cured	Total	Fresh Fish	Fresh Prawns	Cured and Semi-cured	Total
1960	Metric tons				1,000 Rupees 1/			
September	978	233	2 785	3 996	774	28	1 053	1 855
October	1 657	247	3 548	5 452	860	362	1 452	2 674
November	1 828	-	2 559	4 387	1 195	-	1 004	2 199
December	1 792	151	968	2 911	929	348	795	2 072
1961								
January	1 959	141	865	2 965	1 005	317	647	1 969
February	752	143	742	1 637	987	332	461	1 780
March	1 909	157	1 876	3 942	988	341	863	2 192
April	1 161	111	2 925	4 197	558	333	1 160	2 051
May	1 283	99	2 397	3 779	644	262	1 017	1 923
June	867	91	571	1 529	268	283	432	983
July	557	23	100	680	354	51	97	502
August	757	61	257	1 075	405	162	152	719
Annual Total	15 500	1 457	19 593	36 550	8 967	2 819	9 133	20 919

1/ 4.76 Pak. Rupees = 1 US $; 1 Rupee = 100 Paise.

The Wholesale Fish Market, Karachi, started in October 1959. It not only provides facilities for fishing boats which operate from this harbor as their terminal, but also for the fish brought for auction from all the other coastal fishing settlements of West Pakistan. Volume and value of landings are recorded as the collected landings of the entire fishing fleet operating from the Karachi Fish Harbor and from other home ports, the catches then being transported to the Wholesale Fish Market at Karachi by trucks and other vehicles. Roughly estimated, 40 percent of the total landings come from Karachi area fishing boats.

8.4 Disposition of landings

Disposition of landings by fishing craft of all types is roughly estimated as follows:

For fresh consumption	30 to 32 percent
For processing as dried fish	50 to 55 percent
For freezing and canning	2 to 3 percent
For reduction (meal and manure)	10 to 15 percent

At the most 20 percent of the total daily landings is consumed within Karachi limits, mostly distributed through hawkers and retailers.

Canning means canning of prawns; canning of fish has not yet been undertaken by any plant.

8.5 Users

At present there are eight freezing plants at Karachi which freeze shrimp for export and one processing plant engaged in shrimp canning. About 65 firms cure fish. Of these, 35 are exporters of dried fish.

II. LAYOUT AND FACILITIES

1. Plan and Specifications

Figure XV shows over-all layout of the establishment. Total area acquired was 307,500 m^2, of which 182,000 m^2 have been used to build the present establishments.

2. Facilities

2.1 The Channel

The navigation channel (1,650 m long and 60 m wide) in front of the Fish

Market, has been dredged to depth of 3 to 4.2 m. Fishing vessels up to 500 tons can enter the channel.

At the closing end of the channel, there is a turning basin of 168 m^2. This basin can easily accommodate 50 to 60 fishing vessels of average size.

2.2 Main market building

The main market building faces the navigation channel. The main market building and its sections have the following dimensions:

Main market building:	length:	97 meters
	breadth:	36 meters
Sorting section:	length:	38 meters
	breadth	11 meters
Fresh fish auction hall:	length:	58 meters
	breadth	16 meters
Dried fish auction hall:	length:	16 meters
	breadth:	16 meters

There are five sorting tables in the sorting section. Between the fresh and dried fish auction halls in the center of the market are the office of the market management, post office and two banks. Other rooms are for offices, first-aid, storage and other uses. On the rear side behind the fresh fish auction hall, there is a covered veranda with latrines on either end for the market users.

2.3 Ice plant and cold storage

Next to the main market building, facing the landing jetty is the ice plant and cold storage (total area 47 by 17 m), operated by the Karachi Fishermen's Co-operative Society Ltd., under supervision of the Central Fisheries Department.

The ice plant can produce flake-ice (10 tons per day) and block ice (30 tons per day), each block weighing 50 kg. There are two storage rooms for ice, each having a capacity of 40 tons, and 15 to 20 tons storage capacity for fresh fish and shrimp.

2.4 Discharging facilities

The jetty is 530 m long and fronts the market for 93 m. Where it fronts the market, the jetty is covered by a projection 5.5 m wide. A single row of 10 or 12 trawlers can unload simultaneously, but they usually tie up alongside in two or three rows. Fifty or 60 trawlers may tie up if the entire jetty is used.

A number of hand-operated jib cranes are provided along the jetty.

Besides the concrete jetty, two floating jetties have been provided where vessels prepare themselves to go fishing.

2.5 Containers

Every fishing vessel has its own mat-baskets on board for loading smaller varieties of fish. Normally the capacity of these is 22 to 27 kg.

The Fish Market provides mat baskets, wooden and aluminum fish boxes for storing fish in cold storage. No extra charges are made for their use.

2.6 Transport

The Wholesale Fish Market only provides trolleys for transporting fish from the jetty to the auction halls and from there to the veranda, where the vehicles are parked. Buyers provide their own transport of fish from the Fish Harbor to their establishments.

Within the harbor, roads with paving and finishing have been provided and are connected to the main road leading to the City. A rail track runs behind the eastern boundary wall of the market area.

2.7 Fresh water and power supply

Fresh water is available to the Fish Market, its establishments and its facilities and to the fishing boats for their voyages.

The market, its facilities, and all private establishments within the market area, are provided with electricity. It is hoped that gas will be provided very soon.

2.8 Packing halls

There are no halls provided for fish packing. Buyers carry their fish either to the retail markets or to their processing plants within the Fish Harbor or to their establishments in the heart of the city (for shipping upcountry).

2.9 Net-mending halls

Three sheds on the east side of the turning basin are constructed for use as net-mending halls, because direct sunlight shortens the life of the nylon twine nets. Up to now the fishermen are not using these halls because they prefer to sit in the open air. Therefore, at present, two mending halls are being used as dried fish auction halls.

The dried fish auction hall in the main market building has become too small for the huge fish landings and is being utilized now for the sale of fresh prawns and lobsters.

The third hall has been converted into a modern curing yard, so that the

dried fish curers may be made aware of the use of modern curing methods.

2.10 Fuel installation

Facilities for supplies of diesel oil, petrol, and other fuel used by mechanized fishing boats are provided near the turning basin, next to the cold storage and ice plant. The concession for oil installation has been leased by the Government to an oil company, the operation of these installations having been entrusted to a private firm.

2.11 Workshop and slipways

Construction of a workshop and slipway is planned at the opposite side of the turning basin.

2.12 Boatbuilding yard

It is proposed to utilize area bordering upon the Fish Harbor for the fishing boat building industry.

2.13 Fish industry

Within the harbor, in separated blocks, there are reserved plots each of 1,300 to 1,500 m^2 for lease to private processing sectors, such as freezing, canning, extraction of fish oils, and so on. A large plot of land is also reserved on the other side of the channel opposite the Fish Market, especially for modern fish curing under supervision of the Department of Fisheries.

2.14 Fishermen's Co-operative office building

It provides office rooms and stores for articles imported by the Karachi Fishermen's Co-operative Society. It has been constructed and is owned by the Government and rented out to the Society.

2.15 Amenities

There is a fishermen's canteen, divided into two sections: one section caters for the needs of the fishermen; the other, for the buyers, fish auctioneers, visitors, and others.

The fishermen's rest hall is meant for fishermen's rest and recreation when they come from sea. Shower-rooms are provided. One-third of the

rest hall is reserved for fisherwomen.

One first-aid service room is provided in the main market building for fishermen and all other users of the market.

There are three residential bungalows for fish harbor officers and staff whose supervisory duties keep them at the harbor most of the time.

A seafood cafe, constructed by the Government, is for popularizing fish consumption. It is leased to a private party.

The fisheries research station is a two-story building, comprising biological, technological and oceanographical laboratories, museum, aquarium, auditorium, library, office of the Central Fisheries Department, storage and other rooms. A suite of rooms has been provided for research workers coming from universities and other institutions.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

Fishermen bring their catches directly to the jetty in front of the main market building for discharging. Cranes are provided for heavier cargoes. In general, fish is unloaded by the crew in mat baskets, or the bigger and heavier species are thrown from their fishing vessels directly onto the landing jetty. After sorting, fish is placed on trolleys which the crew carry to the auction hall.

Wet-salted fish, which usually forms 40 to 50 percent of the total daily landings, is unloaded on the jetty alongside the sorting section and is auctioned directly on this sorting side.

All fresh fish, prawns, semi-salted and cured fish, are brought to the market, either by ship or overland. The trawlers bring their catches between 1700 and 2200 hours; the fishing launches, sail and small boats from 0300 hours until about 1700. Fresh and semi-dried fish and fresh prawns are auctioned in the fresh fish auction hall; cured fish, in the dried fish auction hall.

2. Organization of sales

The management of the Fish Market has been entrusted to the Karachi Fishermen's Co-operative Society, Ltd. The Society has, in turn, permitted the auction of fish to licensed auctioneers who have been in this business for generations in the Old Khadda Fish Market and who now have re-established in the New Fish Market at the Fish Harbor.

Twenty-three registered fish-auctioning firms are appointed. In the fresh fish auction section, there are 15 firms, of which 11 are engaged in auctioning marine fish. Four firms auction freshwater fish (from the Indus River) and eight firms conduct dried fish auctioning. The 23 licensed auctioneers have about 125 sub-auctioneers working under them whose salaries are paid by the licensed auctioneers.

Fish is brought by the producers to their respective auctioneers and publicly auctioned to the highest bidder. The auctioneers make direct payment to the producers and the management does not enter into any monetary transaction. All fish auctions are recorded in the sale vouchers provided by the management to the auctioneers.

The market starts functioning from 0400 hours and goes on to 1200. Its second shift goes from 1400 hours to 2200. The dried fish business starts at 0900 hours and continues until 1300. Although the Wholesale Fish Market has modern facilities for landing and disposal of fish, the fishermen handle their catches in the old primitive ways. Improvements are only being made gradually. Eventually, fish will be auctioned in baskets and boxes, and no one will be allowed to put fish on the floor.

The fish refuse and other fish for curing and reduction are taken directly to an area 16 miles east of the Fish Harbor, where curing yards and fishmeal plants have been authorized to restrict their establishments to the specified area set up by Municipal Authorities.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

The operation of the Wholesale Fish Market was shifted from the old Wholesale Fish Market at Khadda to the Fish Harbor in October 1959, under Martial Law Regulation No. 75.

The management of the New Fish Market as well as of ice plant and cold storage has been entrusted by the Government to the Karachi Fishermen's Co-operative Society Ltd., under the direct supervision of the officers of the Central Fisheries Department. Two officers and two inspectors, who have experience in fish marketing, socio-economics and statistics have been provided from the Department for over-all control. These officers help the Society in the effective management.

2. Finance

The costs of construction and of installation of the machinery have initially been met by Government funds for the benefit of the fishermen's community.

Out of the auction commission ($6\frac{1}{4}$ percent) 50 percent goes to the registered fish auctioneers for their services and the remaining 50 percent to the Karachi Fishermen's Co-operative Society. The Society's share is spent on the development of fishing villages, education and other essential necessities such as medical aid. A portion of the amount will also be used to establish alternate wholesale fish market and fish landing jetties whenever they are needed.

3. Personnel and Duties

3.1 Government staff

The Government has provided the following staff:

1 Officer in charge, fish market, ice plant and cold storage,
1 Marketing officer,
2 Fisheries inspectors.

They are on the Government payroll and also draw 50 percent of their basic salary from the Karachi Fishermen's Co-operative Society for working and managing the affairs of the market.

3.2 The Karachi Fishermen's Co-operative Society staff

3.2.1 Fish market

1 Office superintendant
7 Assistant supervisors
4 Checking clerks
6 Others (steno-typist, driver, mechanic, etc.)
21 Watchmen
20 Sweepers

Total: 59 Employees

3.2.2 Ice plant and cold storage

1 Supervisor
3 Sale clerks
4 Mechanics and electricians
16 Ice-men
1 Watchman

Total: 25 Employees

The staff is not able to handle all establishments and is to be increased.

4. Common Administrative Services

The Government staff also deals with the social welfare and fishing requirements of the fishermen. They have to see that the auctioneers do not abuse their position by selling fish with underhand tactics, as they did formerly in the Old Market at Khadda. Due to the marketing organization at the New Wholesale Fish Market, the economic condition of the fishermen has been raised considerably by better prices and by preventing any abuse in auctioning.

5. Charges

Commission for auction and other services provided by the management: $6\frac{1}{4}$ percent.

This includes:

3 1/8 percent for the registered fish auctioneers and
3 1/8 percent share for the Karachi Fishermen's Co-operative Society.

K I E L

Kiel is the newest seafish market in the Federal Republic of Germany. Unlike the other German seafish markets, cutter fisheries supply important quantities. A small modern trawler fleet works the same fishing grounds as the Bremerhaven and other German seafish market fleets, and accounts for about half the landings.

Herring is specially important to Kiel as raw material for processing plants, most of which are at Kiel and in Schleswig-Holstein.

Kiel also differs from other German seafish markets by the strong public influence on the entire market activity. The market area is owned by the Federal Republic. The leaseholder (Kieler Seefischmark G.m.b.H - The Kiel Seafish Market Company Ltd.) - is a company owned by the town of Kiel and by Land (county of) Schleswig-Holstein. The company manages the market turnover and the auction, owns an ice factory, and also provides the cutter fisheries to a great extent with boxes for packing fish at sea. Another company, Hochseefischerei Kiel G.m.b.H. (Kiel Deep Sea Fisheries Ltd.) is owned by Land Schleswig-Holstein. It owns the whole Kiel trawler fleet and also has interests in the trade.

Auction rules, intervention by SAG (Seefisch-Absatz-Gesellschaft - Seafish Marketing Company) and minimum prices are the same as at Bremerhaven.

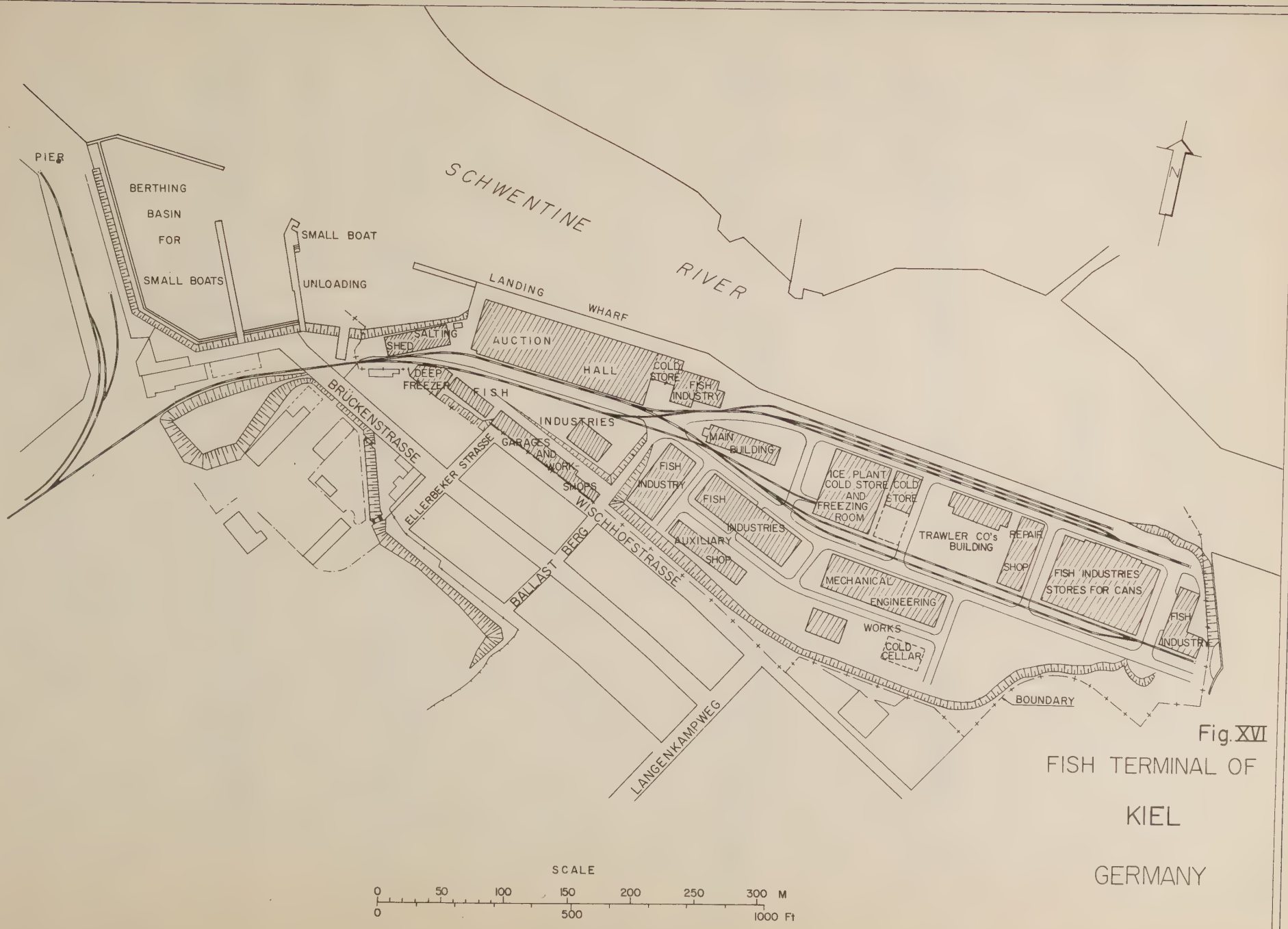


Fig. XVI

FISH TERMINAL OF

KIEL

GERMANY

KIEL - - - FEDERAL REPUBLIC OF GERMANY

I. GENERAL

1. Location

Kiel (population: 270,000) is the capital of the State of Schleswig-Holstein, Federal Republic of Germany, and is at the mouth of the Kiel canal on Kiel Bay, Baltic Sea.

2. Types of Fishing Vessels

German steam and motor trawlers (59 percent of the total landings in 1960). Cutters, luggers and coastal fishing vessels (36 percent of the total landings in 1960). Foreign trawlers and cutters (4 percent in 1960). Freshwater fishery (1 percent in 1960).

3. Species of Fish (figures for 1959)

Herring 42 percent; Redfish 25 percent; Cod 12 percent; Saithe 4 percent. Landings are mainly intended for human consumption.

4. Fishing Areas from which Fish is Landed

Fishing grounds include: North Sea, Waters off Faeroes, Iceland and Norway, Baltic Sea, and, increasingly, grounds off Greenland, Labrador and Newfoundland.

5. Marketing Areas to which Fish is Shipped

Shipment is made to the area of the Federal Republic including West Berlin; there is export to foreign countries too. Herring is in the first line appointed to supplying the processing industry that is on a large scale represented at Kiel and in Schleswig-Holstein.

6. Marketing Methods

Principally by auction. Fish frozen at sea is not auctioned.

7. Market Authorities and Users

7.1 Market authority

Kieler Seefischmarkt G.m.b.H. (Kiel Seafish Market Company) administers the market.

7.2 Suppliers

The Hochseefischerei Kiel G.m.b.H. (Trawler Company Kiel, Ltd.) is a supplier which is owned by the State of Schleswig-Holstein.

Cutter and coastal fisheries are organized in Landesfischereiverband Schleswig-Holstein (Union of the Fisheries of the State of Schleswig-Holstein). Five among 14 fishermen's co-operatives along the shore of Schleswig-Holstein land most of their catches at the Kiel Seafish Market.

Freshwater fisheries are organized in the Verein der See - Fluss - und Teichwirte (Union of the Lake, River and Pond Fisheries).

Importers, including landings by foreign vessels.

Buyers: Processing industry (canning, smoking, freezing, cooking, frying industry as well as fishmeal industry).

Coastal wholesale trade including: 1) the Kiel despatch wholesale trade which is organized in two enterprises: "Kieler Fischfilet" and "Kiel-Frost", and 2) the provincial wholesale trade.

Retail trade.

8. Statistics

8.1 Fishing fleet

Steam and motor trawl fleet
Fourteen trawlers which range from 400 to 650 GRT (1960).

Cutters and coastal fishing fleet Motor cutters (size and number)

Number	Size (length)
25	below 10 m
48	10.1 to 14 m
67	14.1 to 20 m
38	20.1 to 24 m
178 Total	

Other coastal boats: with motor 81
without motor 98

8.2 Number of landings (1960)

Trawlers: 199; Cutters and coastal boats: 1,759.

8.3 Quantities of landings in metric tons (1960)
(by types of fishery and by month)

Cutter and Coastal Fishery							
Month	Trawlers	Deep Sea Cutters and Luggers	Cutters from Sweden	Coastal Cutters	Supplies by Lorries	Lakes	Total
January	1 624	215	-	119	247	25	2 230
February	2 118	492	82	143	244	13	3 092
March	1 824	956	81	123	440	40	3 464
April	1 709	719	-	98	268	41	2 835
May	1 308	1 235	-	115	360	41	3 059
June	1 181	527	87	84	247	35	2 161
July	1 961	932	-	134	215	32	3 274
August	3 229	726	73	127	445	31	4 631
September	3 119	644	101	133	420	30	4 447
October	2 255	600	360	200	252	31	3 698
November	1 384	442	351	334	267	40	2 818
December	1 243	635	272	226	196	38	2 610
Total	22 955	8 123	1 407	1 836	3 601	397	38 319 1/

1/ Remarks: Total value: 19,124,320.62 DM. (4.00 DM = 1.00 US $)

8.4 Disposition of landings in metric tons (1960)

Month	Landings	For human consumption			For foddering and reduction	
		Fresh	Herring (for processing)	Total	Total	From herring landings
January	2 230	1 834	225	2 059	171	1
February	3 092	2 279	518	2 797	295	25
March	3 464	2 047	845	2 892	572	42
April	2 835	1 848	534	2 382	453	10
May	3 059	1 578	504	2 082	977	59
June	2 161	1 350	602	1 952	209	27
July	3 274	1 437	1 435	2 872	402	17
August	4 631	1 377	2 860	4 237	394	128
September	4 447	1 464	2 596	4 060	387	178
October	3 698	1 418	2 068	3 486	212	24
November	2 818	1 632	926	2 558	260	17
December	2 610	1 543	777	2 320	290	21
Total	38 319	19 807	13 890	33 697	4 622	549

LAYOUT AND FACILITIES

1. Plan and Specifications

The total area of the Kiel Seafish Market amounts to 100,000 m^2, of which 42,400 m^2 are used for various buildings. Figure XVI shows the over-all plan and layout of the harbor and fish market.

2. Facilities

2.1 Auction hall

Length: 141.15 m; breadth: 41.36 m; area: 5,760 m^2.

The hall is of steel-reinforced concrete in skeleton construction manner and clinker-coated. This hall can handle 300 to 400 tons of fish at one time.

2.2 Packing facilities

There are ten fish-packing compartments in the market hall. Packing rooms are also available in other buildings.

2.3 Processors

There is a privately-operated fishmeal plant.

2.4 Ice plants

An ice factory is maintained by the Market Company. Daily capacity of the ice plant is 120 tons of clear ice blocks.

2.5 Cold storage space

Space includes a 1,200 m^2 deep-freezing storage room (special storing house with a capacity of 1,200 tons is being built); a 300 m^2 cold storage room; 630 m^2 cellars for cooling casks.

2.6 Salting facilities

A wooden hall of 700 m^2 is available for salting and storing fish.

2.7 Discharging facilities

Tides: water level is almost constant and is only subject to slight changes during strong winds.

Pier: length 700 m, built along the auction hall.

Unloading: by roller tracks and conveyor belts carrying fish in wooden or plastic boxes. Fork-lift trucks are also used.

2.8 Containers

For trawlers, the Market Company keeps 25,000 wooden boxes (60 kg contents each). These are being replaced by plastic boxes.

For landing fish which immediately goes to cold-storage rooms, steel boxes (500 kg contents each) are moved over roller tracks and by fork-lift trucks.

For cutters and coastal fishing boats, the Market Company keeps 60,000 boxes. These boxes are taken on board cutters for use at sea. Fishermen pay to the Market Company after landing a fee of DM 0.17 per box. The boxes are cleaned after use by a cleaning machine, using disinfectants.

2.9 Other facilities

These include bunkering stations for coal and fuel, repairing stations and an accessory shop selling nautical implements. These are run by private firms.

2.10 Internal transport equipment

There is a railway network in the market area. The Federal Railway Administration maintains a freight office in the market area. The branch railways in the area are maintained by the Hafen - und Verkehrsbetriebe der Stadt Kiel (Port and Traffic Enterprises of the Town of Kiel).

2.11 Amenities

Recreation rooms, shower-baths, washing and drying rooms are available to personnel of the Market Company. A canteen is available to all market users. The Market Company also maintains a first aid post manned day

and night.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

Landing and display are carried out in compliance with the Markt-und Betriebsordnung für den Kieler Seefischmarkt (Market Regulations for the Kiel Seafish Market).

The boats are discharged in order of arrival. Discharging work begins at 2100 hours and is to be finished by 0600 the next day, so that buyers may have sufficient time for inspection.

The fish landed is weighed and sorted according to sizes and qualities.

The filled boxes are placed in the auction hall arranged by species and qualities and in equal blocks.

The Market Company is responsible for ascertaining the quantities landed, and for informing the trawler companies and shipowners of the quantities discharged.

Before the beginning of auction, fish displayed is controlled by officials of the municipal sanitary police. Fish not suitable for human consumption is confiscated.

2. Organization of Sales

Normally sales are carried out by means of auction conducted by employees of the Market Company, in accordance with the provisions of the Market Regulations.

In the case of trawlers, auction is carried out in the order of landings. Auction of fish landed by cutters is effected in compliance with the settlement with the cutters' associations.

The buyers, having examined the fish in advance, are not allowed to file complaints and claims later, unless some defects have been concealed.

The Seefisch-Absatz-Gesellschaft (SAG) (Seafish Marketing Company) has been representing all trawler owners since 1 July 1960, and offering the catch on their behalf. The SAG fixes floor prices for all fish, below which the Market Company is not allowed to sell. If the fish has not been sold at this price, it is directed for export or freezing or to fishmeal plant.

Fish landed by cutters and coastal fishing boats is treated in the same manner as that landed by trawlers, except that the floor prices are fixed by the individual boat owners. Many cutter owners of the east coast of Schleswig-Holstein are represented at the market by the secretaries of the co-operative societies to which they belong.

When fish is sold, the property and risk are transferred to the buyer who is obliged to remove the fish immediately from the market. Transport can be

provided by the Market Company. The boxes should be returned to the Market Company on the following day, at the latest, after they have been cleaned. If these boxes have been misused, additional payment has to be made to the Market Company, according to the Market Regulations.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

The real estate of the fish market is owned by the Federal Republic and rented and administered by the Market Company, of which partners are the Municipality of Kiel and the State of Schleswig-Holstein.

The Market Company is responsible for maintenance of buildings, roads and pier installations.

The waters (mouth of the Schwentine) are administered by the Municipality of Kiel.

Private firms in the market area pay rent to the Market Company for the rented buildings and other installations.

Quality control is conducted by the officials of the Municipal Sanitary Police.

2. Finance

The Market Company bears the expenses of construction of buildings and any other market installations, as well as their maintenance expenses.

The Market Company receives payments according to the tariff based on the Market Regulations. These payments include:

Landing charges for discharging vessels.
Auction charges.
Transfer charges (wharfage) for fish not auctioned but transferred only.
Charges for use of boxes (additional charge for misuse can also be made).

Harbor or berthing charges are collected by the Hafen-und Verkehrsbetriebe der Stadt Kiel (Harbor and Traffic Service of the Town of Kiel).

3. Personnel and Duties

The following people were engaged by the Market Company as of 31 December 1960:

37 employers for general administration
53 workers for unloading
19 hall-workers for auction
27 workers including laborers for handling boxes, mechanics, watchmen, etc.
12 workers for the ice plant.

Total: 148 persons

4. Common Administrative Services

Payments for sales: The Market Company prepares a bill of settlement for its unloading work and sends it to the shipowners. As to the auction, the Market Company gives a bill of settlement to shipowners as well as to buyers and auction charges are collected from the proceeds. Payment to the Market Company for the fish purchased falls due after nine days and the Market Company makes security arrangements with individual buyers according to the size of their purchases. Payments to shipowners by the Market Company are made after ten days, except for smaller cutters, which receive proceeds on the day of auction.

Market intelligence: The Market Company maintains a news service providing information concerning landings and prices at all German seafish markets.

Promotion of fish consumption: There is a special kitchen at the market where instructions on fish cooking are given. There is also a local fish publicity organization which is a member of the Fischwirtschaftliche Vereinigung Schleswig-Holstein (Union of the Fishing Industry of Schleswig-Holstein).

O S T E N D

Ostend is the greatest Belgian fishing port and market. Distant-water and North Sea fishing supply the market. Considerable quantities are exported.

The Government rebuilt the Market in 1952 and ceded it without charge to Ostend municipality which manages it. The Municipality also finances new installations and pays maintenance and operation costs.

Fishing craft must unload in the fishing port, and their goods must be sold by public auction. Responsibilities for unloading and auctioning do not rest with the administration; unloading is done by fish dockers working for the shipowners. Catches are sold for the shipowners by two tally-keepers' associations which settle with the shipowners and levy the municipal taxes.

The auction is a descending auction. Since 1960, herring and sprat must also be sold by public auction. These had previously been sold by sample at an exchange, a system that proved a failure.

A minimum-price system connected with the auction system was set up in 1959 for certain species. This system secures first-hand prices. Simultaneously, the Government uses it to help certain categories of industry which are not in an economically favorable position, to overcome difficult export situations and to prevent good quality fish from being used for fishmeal. The Government bears most costs of the system.

FIG. XVII

(AN UP-TO-DATE PLAN OF THE FISH TERMINAL OF OSTEND HAS BEEN REQUESTED FOR INCLUSION IN THE FINAL EDITION.)

OSTEND - - - - - BELGIUM

I. GENERAL

1. Location

Ostend (population: 52,000) in the province of West Flanders, is Belgium's main fishing port and seaside resort. Ostend is also the embarkation point for crossing the English Channel to England (Dover).

2. Type of Fishing Vessels Served

Deep-sea trawlers; offshore trawlers; inshore fishing vessels; shrimpers.

Although Ostend serves as home port for various types of marine fishing craft, it is primarily a port for high-sea trawlers.

3. Species of Fish

The main species landed are: cod (approximately 18 percent of total landings), whiting (about 11 percent), plaice (about 10 percent), sole (about 9.5 percent), haddock (about 7.5 percent), herring (about 7 percent), saithe and skate (each about 5 percent).

4. Fishing Areas from which Fish is Landed

Fishing grounds include: inshore seas, North Sea (including Moray Firth, Fladen), English Channel, Bristol Channel, waters off south and west Ireland, west Scotland, Iceland, Bear Island, Barents Sea and Labrador.

5. Marketing Areas to which Fish is Shipped

The fish landed at Ostend is forwarded to all parts of Belgium. A considerable quantity is also exported to France, Great Britain, Italy, Germany, the Netherlands, and other countries.

6. Marketing Methods

By public auction.

7. Market Authorities and Users

7.1 Market authority

The Municipality of Ostend has charge of the fish auction market and facilities.

7.2 Users

Shipowners: All fishing craft sell their catches at the market.

Buyers: Wholesalers, retailers (including a number of small fishmongers), fish processors and the fishmeal and fish oil manufacturers.

8. Statistics

8.1 Fishing fleet

The Ostend fishing fleet has 190 vessels with a total horsepower of 47,918 and a total gross tonnage of 19,758 tons. There are six categories of fishing vessels:

Shrimpers (with engine of less than 80 hp):

43 out of 101 1/
total hp: 2,352
gross tonnage: 731 t;

Inshore fishing vessels (with engines of 80 to 120 hp):

18 out of 71 1/
total hp: 1,627
gross tonnage: 421 t;

1/ The first figures refer to the number of boats with Ostend as home port, and the second figures refer to the total number of boats for the whole of Belgium. Boats registered at other Belgian ports occasionally sell their catches at Ostend. Foreign fishing vessels are not authorized to land their catches unless they are obliged to do so by unforeseen circumstances.

Small trawlers for offshore fishing (with engines of 120 to 240 hp):

44 out of 142 1/
total hp: 7,355
gross tonnage: 3,063 t;

Large trawlers for offshore fishing (with engines of 240 to 350 hp):

51 out of 64 1/
total hp: 13,724
gross tonnage: 5,431 t;

Small trawlers for deep-sea fishing (with engines of 350 to 500 hp):

19 out of 22 1/
total hp: 7,955
gross tonnage: 3,157 t;

Large trawlers for deep-sea fishing (with engines of over 500 hp):

15 out of 15 1/
total hp: 14,905
gross tonnage: 6,955 t.

There are no boats used specially and exclusively for herring fishing, but suitable fishing craft of all kinds fish herring when the season opens.

8.2 Number of trips

No analysis is made by type of fishing vessel.

Arrivals at the fish auction market in Ostend average 35 to 40 per day in winter and 25 to 30 per day in summer on Mondays, Tuesdays and Wednesdays, and about 7 to 9 on Saturdays.

Fish is not landed on Thursdays as a rule since the interval between Thursday and Friday (fish day 2/) is too short to make the necessary arrangements for that day.

No landings are made on Fridays but they commence again, on a small scale, on Saturdays.

8.3 Quantities and value of landings

1/ The first figures refer to the number of boats with Ostend as home port, and the second figures refer to the total number of boats for the whole of Belgium. Boats registered at other Belgian ports occasionally sell their catches at Ostend. Foreign fishing vessels are not authorized to land their catches unless they are obliged to do so by unforeseen circumstances.

2/ Members of the Roman Catholic faith abstain from eating meat on Fridays and generally eat fish courses in place of meat courses.

The following figures show monthly landings for 1960:

Month	Demersal fish	Pelagic fish	Crustaceans and molluscs
	Kilograms		
January	2 959 328	518 804	16 209
February	3 582 010	28 746	23 498
March	3 553 629	50	45 237
April	2 481 704	7 306	50 056
May	2 688 981	22 671	142 353
June	2 552 905	15 342	143 174
July	1 715 427	117 588	200 251
August	2 531 714	90 424	270 304
September	2 578 400	97 246	150 747
October	2 771 681	564 110	122 000
November	2 769 414	1 484 454	68 906
December	2 155 243	969 869	27 760
Annual Total	32 340 436	3 916 610	1 260 495

During the summer, when consumption decreases, the shipowners overhaul and repair their craft, and do less fishing.

In 1960 value of landings was estimated at a total of 390 417 764 B.Fr. 1/ subdivided as follows:

351 369 641 B.Fr. for demersal fish
16 765 615 B.Fr. for pelagic fish
22 282 508 B.Fr. for crustaceans and molluscs.

8.4 Disposition of landings

Fresh fish (for all species): a total of	32 650 000 kg
For processing industries at least ten percent of total landings, i.e. about	3 750 000 kg
For fishmeal, about 3 percent of total landings, i.e. about	1 120 000 kg
Total	About 37 520 000 kg

1/ 50 B.Fr. = 1 US $

8.5 Users

Number of shipowners:

Individual or family enterprises	140 out of 327 1/
Informal associations	20 out of 40 1/
Limited liability companies	3 out of 11 1/
Joint stock companies	6 out of 6 1/

Number of buyers:

Wholesalers	about 100
Retailers	about 520

Fish processors (15) and fishmeal and fish oil manufacturers (2) are included.

II. LAYOUT AND FACILITIES

1. Plan and Specifications

(To be included in final edition)

2. Facilities

2.1 Selling area

The total area of the fish market with all accessories (roads, warehouses, railway, loading wharf) is 37,632 m^2.

The fish market hall is 336 m long and 20 m wide. There is a loading wharf 3.5 m wide, and a road 16 m wide, running the whole length of the fish market and allowing fish haulage to the storage depots.

The fish hall can take 15,000 baskets, each of 52 kg capacity. The herring market hall is located in an extension of the fish market and is 320 m long and 20 m wide. It can take 14,500 baskets, each holding 52 kg of herring. In the herring market hall, herring is only sold fresh,

1/ The first figures are for Ostend; the second figures refer to the entire Belgian fleet.

never salted. When landings are abundant, other species of fresh fish may also be sold in the herring market hall.

The building materials used are the local yellowish bricks, pillars of reinforced concrete, concrete paving-stones, and large steel doors.

2.2 Merchants' premises

The fish market comprises:

44 stores, each 7 m wide by 20 m long in the first row;
34 stores, each 7 m wide by 10 m long in the second row.

These two rows are separated by a road 14 m wide. Each store has a ground floor for storage and a first floor for offices. The premises are fitted with electricity, gas and running water for drinking, and are also provided with toilets.

The herring market hall has 35 stores of the same type, equally well equipped.

2.3 Processors

In Ostend there are 11 private processing companies, including 2 for manufacturing fishmeal. All buy their fish from the Ostend fish market, but none of these industries are located in the market premises.

2.4 Ice plants

There are two private plants in Ostend but they are not located in the fish market. Each has a capacity of about 250 tons of ice per day. As a rule, one kg of ice is used per kg of landed fish.

2.5 Cold storage space

There are two large privately-owned cold stores, the "Froid Industriel" and "Les Frigorifères du Littoral", but they are not located in the fish market. They have a storage capacity of 6,500 m3 and 6,870 m3 respectively.

2.6 Discharging facilities

The fishing port has two slipways, two lock-gates, one wet dock 760 m long on the north side and 665 m on the south side, and 125 m wide, so that the berthing quay is 1,425 m long. There is a tidal dock parallel to the wet dock for smaller tonnage vessels. This tidal dock is

300 m long and 60 m wide.

Various firms which deal in the following fisheries material and equipment are established along the eastern side of the wet dock quay: ice plants; fuel depots; repair shops; boiler works; freezer plants; ropes and fish nets; wireless sets and engines; fish waste and fishmeal plants. All these are private firms supplying marine fishing enterprises, the wholesale trade, the fishing industry and other industries connected.

Small cranes are used for unloading. There are 25 to 27 of them, all owned by a private company, and all operated electrically.

2.7 Containers

As a rule the fish is put up for public auction in baskets of 52 kg capacity. There are in use 30,000 to 40,000 baskets, according to season. As yet, wooden tubs and aluminum cases have not been used. These baskets belong to a lessor (Ostend firm) who hires them out to the shipowners; they are rented out at 3.25 Fr. per day for the larger fish and 2.75 Fr. per day for sprats. They must be returned the same day and are cleaned by the lessor's workers. Three fishing enterprises have their own baskets. These three firms have also recently made a contract with the lessor to obtain their containers from him in future.

2.8 Internal transport equipment

Carriers: six, privately-owned. Carts: about 120 hand carts.
Fork-lift trucks: one, in the fish market hall.

2.9 Sorting and weighing equipment

There are about 30 units of equipment, all belonging to two tally-keepers' associations and to discharging foremen.

2.10 Fresh water supply and power

Drinking water is obtained from the town for cleaning the fish auction market, accessory plant, stores, and other areas.

Electricity is used for lighting and for operating lock-gates and slipways, and is supplied by the municipal electric power company. The auction hall is lit by 500 electric bulbs of about 200 watts each. The fish merchants' stores are fitted out likewise.

2.11 Transport

Haulage is done mainly by rail. A train of about 20 cars and carrying about 220 tons of fish leaves the fish auction hall every day except Saturdays and Sundays. This figure is less in the summer, but much higher in the winter.

Road traffic is also intensive. About ten trucks carrying three to five tons are used for taking fish to destinations outside the country, and there are 200 trucks of 200 kg capacity which haul the fish from the Ostend fish market to other areas.

There are no waterways or canals. Cases or boxes of fish for United Kingdom are shipped by sea.

2.12 Amenities

One restaurant in the fish market hall open to the public. It is operated privately under a concession granted by the Ostend municipality for three, six or nine years.

There are about ten washrooms in the auction halls and administration premises, and about 40 shower-baths.

There are four first aid posts: two in the auction hall, one at the lock-gates of the fishing port and one near the slipways.

There are no recreation facilities.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

According to the regulations of the market administration, the fishing vessels are unloaded in order of arrival. Unloading begins at 0400 hours and continues to 1100.

The unloaded fish is weighed and sorted according to species and size by about 100 fish dockers. A few fishing enterprises have their own unloaders.

All fish on the boats which enter the fishing port must be unloaded and sold by public auction. (Filleted fish is not sold by public auction.) The municipal officials are responsible for sorting and classifying the fish.

Before the fish is sold, the quality is thoroughly checked by the official inspectors appointed by the Ostend municipality. Fish of doubtful or inferior quality is removed and sent to the fishmeal manufacturing plants. The fish is displayed on the ground or put into baskets.

2. Organization of Sales

The catch is sold for the shipowners by tally-keepers' associations which receive an average of 1.45 percent of the gross returns. There are two of these associations in Ostend; the "Onderlinge Visafslag" and the "Motorvisserij".

The fish is sold by Dutch auction (descending auction). Only the merchants listed on the trade register as fishmongers, and who are known at the fish market as fish buyers, may attend. The tally-keeper loudly calls out a fairly high price for each consignment or lot of fish, usually by species. The price is then gradually reduced until it is stopped by the buyer who wants to pay the last-called price.

No trading is done. The merchants who wish to buy one or several lots have to stop the tally-keeper when he arrives at the price at which they wish to buy. Consequently, no prices are fixed beforehand. The tally-keepers' associations inform the skippers as to the price obtained for their catch.

Public auction usually begins at 0730 hours, although the time changes according to season and is set to accommodate distribution requirements. Quantity and species of fish for sale are to be announced in advance by the shipowners.

The quantities and prices of the fish landed and the name and number of the fishing vessel which caught them are recorded by two or three municipal employees. These data are afterwards checked by the "chef de halle" (Manager of the Fish Market) and by the market controller.

Herring and sprat are sold in the same way in the herring market hall. Before 1960, herring and sprat were sold by sample. As this system led to abuse, herring and sprat are now put up for sale in baskets, just as for other species, and are sold by public auction.

The fish caught off Iceland is also sold separately.

All ships, in every category, receive similar treatment. Landings from foreign craft are not normally allowed but if foreign vessels are forced by weather or other unforeseen circumstances to sell their catches in Ostend, they receive the same treatment as Belgian vessels.

The fish is taken away as soon as it is sold and the baskets used must be emptied without delay so that the municipal cleaners can start cleaning the halls immediately.

Since 1959 there has been a "fish recuperation system" in force which consists in fixing minimum prices for certain species of fish (below cost price). If these prices are not reached the fish is bought at the minimum rate by the Government's commercial food control service for the benefit of the shipowners. This "recuperated" fish is then resold - usually below the minimum price - to the fishmeal manufacturing plants, or else to certain merchants or industrial processors. These are up against very keen foreign competition. There is no question of speculation of a "second sale". It is primarily a matter of helping certain categories of industries which are not in an economically favorable position. This "recuperated" fish is, as tinned fish, to be exported to countries outside the European Common Market. This "recuperated" fish must be of prime quality. Sending good quality fish to fishmeal factories is avoided.

The Government contributes three-quarters of the costs. The shipowners

contribute one-quarter, plus administration expenses.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

The fish market and the entire fishing port is managed by the Municipality of Ostend. The whole unit was rebuilt in 1952 by the Government, the "Département des Travaux Publics" (Department of Public Works), and afterwards ceded to the Ostend municipality.

The personnel, therefore, are ıgaged by the municipality and have the same status as other municipal workers.

The manager of the fish market, the "chef de halle" holds the post of director and is responsible to the Ostend municipal councillors. Until now the manager of the fish market has also acted as a director of the fishing port.

2. Finance

Since the Municipality of Ostend owns the fish market, it must pay all maintenance and operating costs and new expenditure: for example, new buildings such as the bays which provide shade for the refrigerator railcars; a railway line that goes as far as the west end of the fish market. The Municipality levies a tax on each sale. It also levies harbor and lock-gate dues according to vessel tonnage and slipway dues depending on tonnage and length of stay. Merchants pay rent to the Municipality for the various stores and depots at the fish market.

3. Personnel and Duties

The municipal administration of the fish and herring markets consists of one acting manager, one controller, one supervisor, six clerks, three fish inspectors, 20 workmen and one foreman. There are also two lock-keepers and three or four slipway workers.

All other personnel of the fish market are persons working for private firms and shippers: cleaners, haulers, employees and dockers.

4. Common Administrative Services

4.1 Payments for sales

The tally-keepers settle all affairs between the shipowners and buyers and see to the payment of the municipal tax.

4.2 Market intelligence

The municipality gives all information wanted from state or provincial Government offices and supplies all figures they may require for compiling statistics. All fish market users may apply to the administration for any marketing information they require. This service is free, but a tax of 12 B.Fr. is charged for written information.

5. Charges

Charges levied by the municipality

Tax on each sale: one percent on the gross amount obtained from the sale of all marine products, no differentiation being made as to species of fish, type of fishing vessel or home port.

Harbor and lock-gate dues: 100 to 1,000 B.Fr. according to tonnage.

Slipway dues: 500 to 6,000 B.Fr. depending on tonnage and length of stay of the vessel.

Annual rent for the various stores: 16,000 to 32,000 B.Fr.

Charges levied by the tally-keepers' associations

Average of 1.45 percent of the gross returns from sales.

TAKORADI

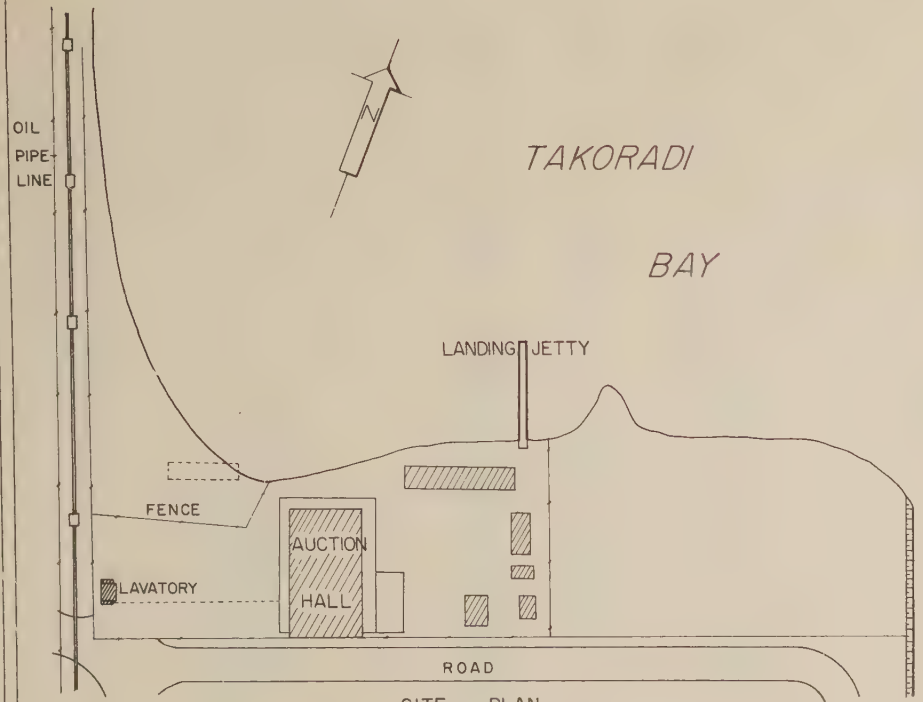
Ghana, on the Gulf of Guinea, is making great efforts to develop a modern fishing fleet, equipping fishing ports and establishing facilities for fish marketing and distribution in order to achieve greater self-sufficiency in fisheries.

The Takoradi establishment is a reflection of this effort, and shows a wholesale fish market in the rough state of its early years. It should be particularly interesting to other developing countries intending to establish markets.

Takoradi market was set up as a pilot scheme with FAO advice and assistance. It started operations in May 1960. Before its establishment there were no central fish collection points, distribution was casual, and landings were spread out on open beaches. Similar wholesale markets have since been established or are being planned.

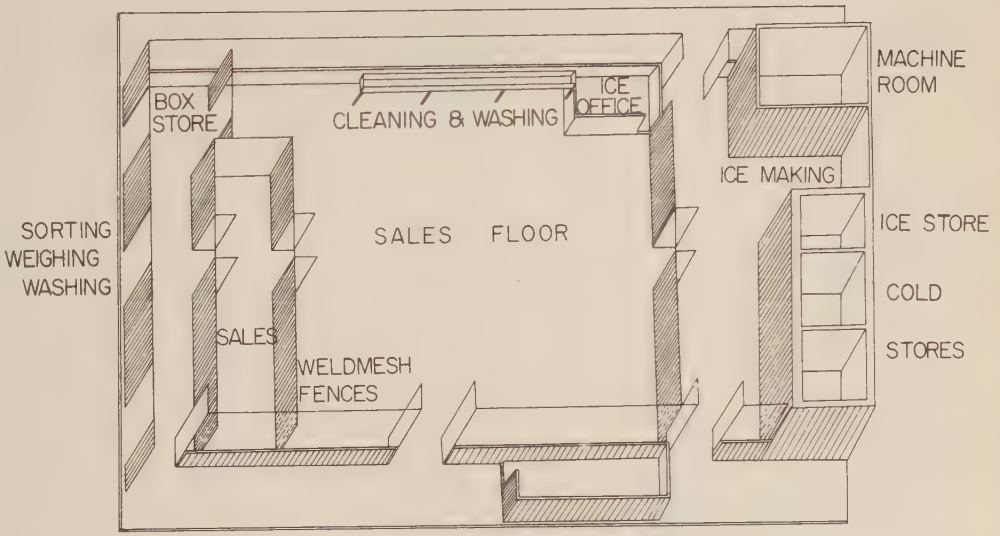
The main purposes of Takoradi market were to provide better distribution facilities; to avoid fresh fish spoilage by providing ice for use at sea and cold storage for fish unsold on the day of landing; to introduce new and better equipment; and to assist fishermen to become financially independent.

There is no auction. Fishermen may sell through Market Authority or on their own initiative. In the latter case, the Market Authority will see to it that the fisherman, who, by tradition, is frequently financially committed to a certain middleman (for example, for loans to buy craft and gear) is paid at least once a week. It is intended to run the market on a co-operative basis in the future.



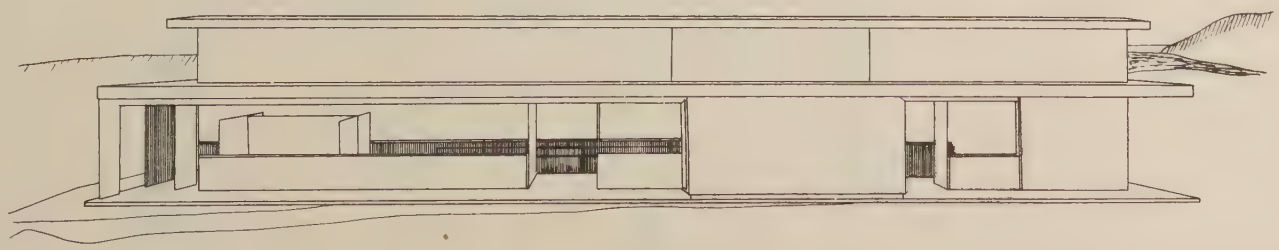
SITE PLAN

AUCTION HALL



MARKET OFFICE

AUCTION HALL



FRONT ELEVATION

Fig. XVIII

FISH TERMINAL OF

TAKORADI

GHANA

TAKORADI - - - - - GHANA 1/

I. GENERAL

1. Location

Takoradi is the main fishing center in the Western region of Ghana. It is on the Gulf of Guinea. The Takoradi Wholesale Fish Market is on Fisheries Bay east of the Takoradi main harbor.

2. Type of Fishing Vessels Served

Motor fishing vessels, fishing canoes, beach seiners and line-fishing boats.

3. Species of Fish

The main species are cassava, sole, ray, sardinella, tuna, sea bream.

4. Fishing Areas from which Fish is Landed

The main fishing grounds for trawlers are 10 to 20 miles from the harbor. Line-fishing boats catching fish such as sea bream and tuna go farther.

5. Marketing Areas to which Fish is Shipped

Fish landed in the Takoradi Wholesale Market is supplied to the Takoradi area and the hinterland, including Kumasi, Dunkwa and Tarkwa.

6. Marketing Methods

There is no auction. A market sales officer assists fishermen in conducting sales, and also acts as a fisherman's representative in negotiating sales.

1/ Some of the data furnished for this Market have been taken from FAO/EPTA Reports Nos. 1300 and 1446.

7. Market Authorities and Users

7.1 Market authority

The market is run by the Ghana Fishing Corporation, an independent corporation financed by the Central Government.

7.2 Users

The fishermen: under the Fisheries Ordinance licensed motor fishing vessels are required to present their catches for weighing.

The traditional fishmongers (women) and other firms or individuals; all buyers must be registered.

8. Statistics

8.1 Fishing fleet

Total number of vessels permanently based at Takoradi	66
Number of vessels owned by co-operative fishing societies	9
Number of vessels owned by private individuals	57

All 66 boats have inboard engines. They are about 8 m long, 22 hp, and carry a crew of seven to ten.

Takoradi supplies are supplemented by the canoe fishery (using only paddle and sail) from the neighboring fishing villages.

8.2 Number of trips, and quantities, and value of landings (1961)

Month	Number of trips	Quantities (lb)	Value 1/ (£)
			£ s d
January	1 149	195 075	6 212 18 10
February	1 136	235 017	9 225 14 8
March	975	104 103	4 315 18 7
April	935	91 946	3 089 14 9
May	919	64 455	2 092 2 8
June	612	32 085	1 229 18 0
July	490	222 595	5 723 0 8
August	157	69 379	3 731 14 2
September	282	132 459	4 503 10 3
October	720	152 898	5 240 9 8
November	1 237	184 217	6 412 3 3
December	1 392	176 640	5 728 7 0
Annual total	9 996	1 661 069 (752 metric tons)	£57 806 2 6

1/ £0.357 Ghana = 1 US $

8.3 Users

Number of wholesale buyers: 61. Estimated number of retailers: 150.

II. LAYOUT AND FACILITIES

1. Plan and Specifications

Figure XVIII shows a site plan of facilities and the layout of the Auction Hall.

2. Facilities

The facilities were planned and built for an estimated annual turnover of about 1.5 million lb (680 metric tons).

2.1 Market building

The market building is steel-framed, roofed with corrugated aluminum sheeting. Concrete walls 1.2 m high surround the market floor and welded mesh screening is used between walls and roof.

Dimensions: Over-all - 36 by 24 m
Internal - 33 by 18 m

The building has two 3-meter verandas, one on either side. The eastern veranda gives covered access to the landing beach for ice or gear delivery. The western veranda has a section enclosed for the market office and a receiving bay opening into the sorting and weighing sections for receiving fish from landing centers outside Takoradi.

Internal partitioning is in prefabricated welded mesh panels which are temporarily fixed, but can be rearranged according to requirements from time to time.

Cleaning and washing benches are provided along the eastern wall for use by fish traders. The main market floor is clear to allow future extension of the sales bay or for use as an auction floor, if it is found that traders will accept an auction form of selling.

2.2 Ice

The ice-works occupy a section of the market building which is 18 m wide by 9 m deep. This is separated from the main floor by welded mesh panels. A separate delivery door is provided for ice and fish being removed from storage.

A 10-ton ice store is provided and 45 m^3 of cold stores are provided in two separate rooms. The ice-plant has a capacity of four tons per day.

Fishermen and registered fish buyers should at all times have preference over outside interests in the purchase of ice or use of cold storage rooms. Because of the limited production capacity of the ice-plant, an order system for ice requirements has been instituted. At all times a four-ton reserve ice supply is kept in the ice storage room and surplus ice above the orders and reserve could then be made available to outsiders.

Of the two fish storage rooms, one is set aside for the use of fishermen with the other room reserved for fish buyers.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

The fisherman presents his catch at the market weighing section. Market employees sort and weigh it according to species, and a receival docket is written out recording this information. The receival docket is made out in triplicate, one copy being handed to the fisherman as a record of his catch, one copy to be used by the market as the results of sale, for subsequent payment to the fisherman, and the third copy for market records and statistics. The use of standard cases of 50 lb (22 kg) capacity within the market premises enables subsequent sales to be made in box or part-box lots. In other words, a sale by volume, not necessarily by weight, is possible.

2. Organization of Sales

When the fish has been weighed, sorted and cased, and each case identified with the fisherman's name or number, the catch is moved into the selling bay. Here it is optional for the fisherman to conduct his own sale to the market women, or he may designate the selling authority to the market.

As auctioning is unknown at present, it was suggested during the early operation of the market that all sales should be conducted by private treaty. When an agreed price has been reached, the sale will then be recorded by a member of the market staff.

Delivery may then be taken by the purchaser and the fish removed from the selling bay to the open market floor area where facilities are available for washing or cleaning. Ice can be purchased, or fish is transferred to storage or removed from the market premises.

Should negotiations be unsatisfactory, the fisherman, on his own responsibility, may either transfer the fish to cold storage, where he will be required to pay a storage fee, or remove the fish from the market premises for his own use or sale.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

The market is run by the Ghana Fishing Corporation which is an independent corporation financed by the Central Government. On matters of policy the Corporation is advised by the Fisheries Division of the Ministry of Agriculture.

2. Finance

Total cost of construction, including all equipment, was £25,000. Since the market started in May 1960, maintenance costs are at a minimum. The market is supposed to be self-supporting financially, by the sale of ice, the rental of cold stores, and a sales commission.

3. Personnel and Duties

The market staff is made up of the following: one manager, one accounts clerk, and his assistant, two sales clerks, two weighing clerks, one receiving clerk, one stock recording clerk (ice and cold storage), three fitters, three ice laborers, three market laborers, one watchman and two gatekeepers.

4. Common Administrative Services

The market undertakes collection of the debt from the purchaser and pays the fisherman weekly on each Tuesday, for all sales made on his behalf during the preceding seven days, less a sales commission of six percent, and any additional charges incurred or the cost of purchases made by the fisherman from the market during that period.

The market does not give loans to fishermen. Loans made to fishermen to increase their operating efficiency are given by the Government. The repayment of such loans can be made on a percentage basis from returns on fish sales.

5. Agreements with Users and Regulations

The following rules cover the use of the market:

Entrance to the market is limited to registered fish buyers or bona fide fishermen.

The minimum quantity to be purchased by any single buyer is 50 lb (22 kg) of fish (i.e., one case).

Terms of trading are cash payment each Tuesday for all fish purchased during the preceding seven days. Any registered buyer who fails to make payment on a Tuesday for purchases made during the preceding week automatically loses registration and is precluded from further use of the market or its facilities.

6. Charges

Sales commission: six percent charged to fisherman. Storage fee: 1/- per 50 lb (22 kg) case or part-case per 24 hours. Ice charge: 3/- per 56 lb (25 kg) block.

TOKYO

Tsukiji Wholesale Fish Market is Tokyo's central fish market. It was built in 1935. It is part of the Tokyo Central Wholesale Market, which comprises, besides Tsukiji Wholesale Fish Market, six detached markets and 13 distribution points which deal partially in fish.

The Market supplies a population of 15 to 20 million, the daily average turnover being about 1,600 metric tons. More than half the fish is sold fresh. A few fishing boats come directly to the Market from the fishing grounds, but most deliveries are made by train or truck.

The Tokyo Metropolitan Government manages Tsukiji Wholesale Fish Market. The Market operates under the Tokyo Central Wholesale Market Operation Regulations. These regulations were enacted by the Tokyo Metropolitan Assembly and are based on the Central Wholesale Market Law, the basic national law regulating wholesale markets. In principle, the Market is operated as a self-supporting organization. It maintains itself by collecting dues; some public funds are granted for market enlargements.

As a rule, sales are by public ascending auction. Sellers are commission merchants (consignees) who sell the fish consigned by producers or shippers. Sales are made according to the Conditions of Consigned Sales approved by the Market Authorities, i.e., Tokyo Metropolitan Government. The consigner is allowed to reserve minimum prices. The consignee is licensed by the Minister of Agriculture and Forestry. The auctioneer is an employee of the consignee and must also be licensed by Market Authorities. Auction takes place in order of arrival of goods. Buyers are mainly wholesalers who rent stalls in the Market premises and sell at negotiated prices to retailers. Retailers are, in principle, not admitted to the auction.

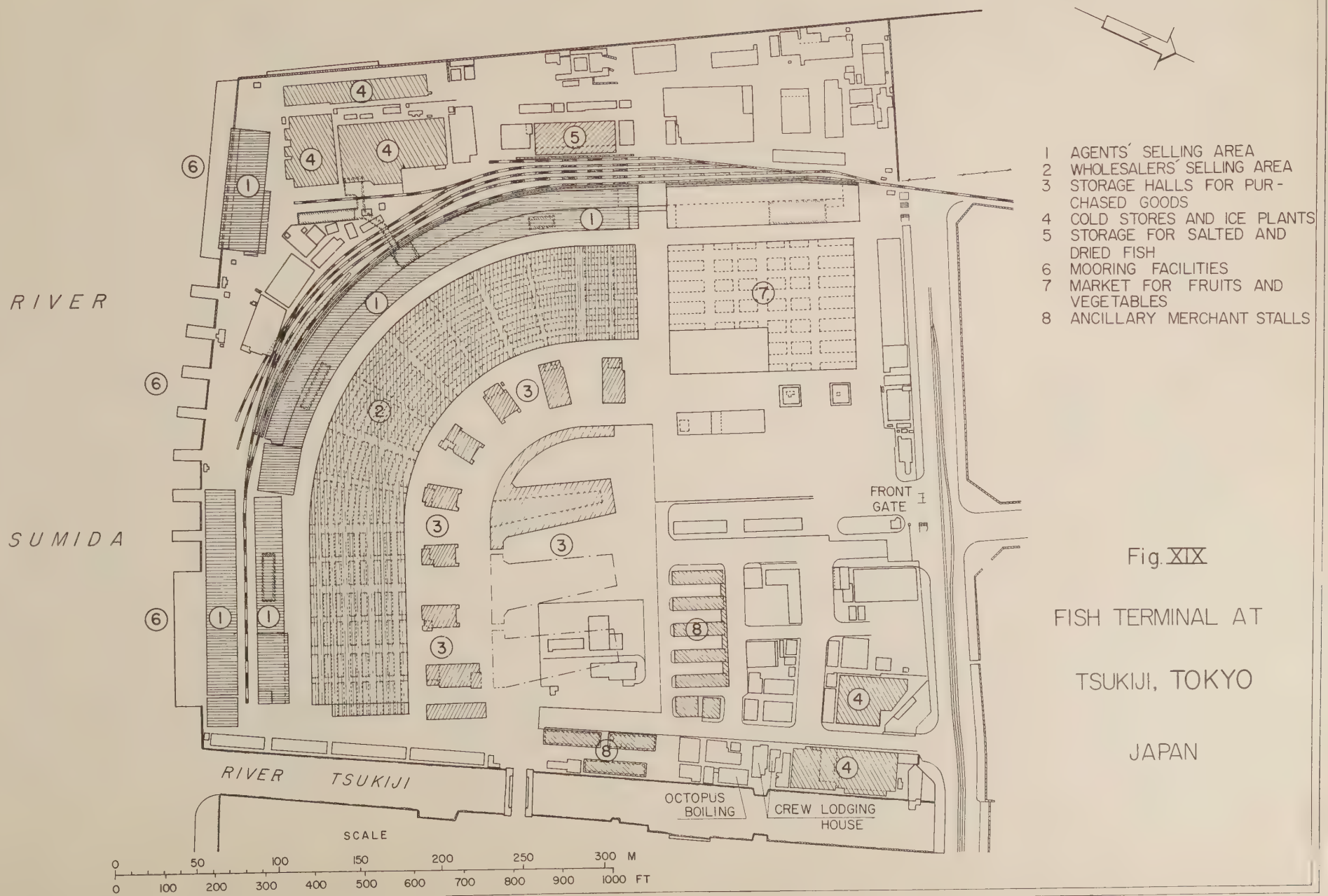

RIVER
SUMIDA
RIVER TSUKIJI
FRONT GATE
OCTOPUS BOILING
CREW LODGING HOUSE
SCALE
0 50 100 150 200 250 300 M
0 100 200 300 400 500 600 700 800 900 1000 FT
1 AGENTS' SELLING AREA
2 WHOLESALERS' SELLING AREA
3 STORAGE HALLS FOR PURCHASED GOODS
4 COLD STORES AND ICE PLANTS
5 STORAGE FOR SALTED AND DRIED FISH
6 MOORING FACILITIES
7 MARKET FOR FRUITS AND VEGETABLES
8 ANCILLARY MERCHANT STALLS

Fig. XIX

FISH TERMINAL AT

TSUKIJI, TOKYO

JAPAN

TOKYO - - - - - JAPAN

I. GENERAL

1. Location

Tsukiji Wholesale Fish Market, in the Tsukiji District of Tokyo (population: approximately 9 million in Metropolitan Tokyo; 15 to 20 million including surrounding area), is a part of the Tokyo Central Wholesale Market, which deals not only with fish but also with fruit and vegetables. The market consists of the main market in Tsukiji and six branch markets and fourteen distribution centers located throughout Metropolitan Tokyo.

The Tsukiji Wholesale Fish Market faces the Sumida and Tsukiji rivers, which flow into Tokyo bay, and has an advantageous location for both overland and marine transportation.

2. Type of Fishing Vessels Served

Mostly bonito and tuna boats.

3. Species of Fish

Tuna, bonito, mackerel, mullet, sardine, cod, flounder, salmon, molluscs, crustaceans and others.

4. Fishing Areas from which Fish is Landed

Only a few fishing boats come to the market straight from the fishing grounds. Fishermen's co-operatives or private firms transport fish by ships, freight trains and motor trucks from many other landing places in Japan to the Tsukiji Wholesale Fish Market.

5. Marketing Areas to which Fish is Shipped

Fish is distributed to the Tokyo Metropolitan area and a zone including more than 20 satellite cities.

6. Marketing Methods

Usually public auction.

7. Market Authorities and Users

7.1 Market authority

The Tsukiji Wholesale Fish Market is subject to the Central Wholesale Market Law, and is under the management of Tokyo Metropolitan Government which is responsible for running facilities and controlling dealers transactions.

7.2 Users

Suppliers are consignees; these are commission merchants, licensed by the Agriculture and Forestry Minister, who sell consigned fish by auction.

Buyers are wholesalers, who by permission of the Tokyo Metropolitan Government, buy fish at the auction from the consignees and sell it to the retailers at their market stalls. Other buyers are "auction participants", who usually represent big consumers such as factories, schools and so on, and who buy fish by auction directly from consignees together with wholesalers.

Retailers, grocers and fishmongers are not allowed to participate in the auction sale; they purchase fish at the wholesalers' stalls in the market.

8. Statistics

8.1 Quantities and value of landings

In 1960, about 582,175 tons of fish were brought to the Tokyo Central Wholesale Market, of which 536,805 tons (92.2 percent) were brought to the Tsukiji Wholesale Fish Market. The value of these 536,805 tons was 55,463,252,816 Yen 1/. Daily average turnover is about 1,600 tons.

Of the total volume brought to Tsukiji Wholesale Fish Market, about 56 percent were received by railroad, 30 percent by truck and 14 percent by boat.

The following table shows the volume and value of the turnover of the Tsukiji Wholesale Fish Market by months (1960):

1/ 360 Yen = 1 US $

Month	Quantities (metric tons)	Value (1,000 Yen)
January	39 752	4 102 423
February	44 763	4 044 185
March	47 561	4 387 341
April	44 469	4 352 923
May	45 439	4 396 322
June	40 891	4 178 566
July	38 043	4 155 829
August	35 755	4 099 386
September	42 675	4 428 446
October	48 419	5 101 837
November	50 530	5 234 743
December	58 508	6 981 252
Annual total	536 805	55 463 253

8.2 Disposition of landings

Up to 60 or 70 percent of fish and fish products remain in Tokyo and its suburbs. The rest is shipped to more than 20 prefectures (provinces). Of the total, about 55 percent were fresh fish, 28 percent processed dried fish and 17 percent other forms.

8.3 Users

Numbers of suppliers and buyers at the Tsukiji Wholesale Fish Market:

	Consignees	Whole-salers	Auction Participants	Retailers
Persons	7 (companies)	1,511	116	about 20,000

II. LAYOUT AND FACILITIES

1. Plan and Specifications

Figure XIX shows a plan of the Tsukiji Wholesale Fish Market. The market is

a general wholesale market handling fruit and vegetables as well as fish. It is built in a hall style. It was built by the City of Tokyo in 1935. Total area ia 196,739 m^2.

2. Facilities

2.1 Selling area

There are two selling (auction) areas for consignees of fish:

The first is 13,457 m^2 in area and is of steel-framed reinforced concrete construction. The ground floor is used as consignees' auction area; the second and third floors as offices. The second auction area is 2,409 m^2 and is also of steel-framed construction.

The selling lot for fish wholesalers is steel-framed construction, one floor, and totals 21,087 m^2.

There are also ancillary merchants' stalls where equipment and sundries are sold. These are on one floor, cover 2,136 m^2, and are of reinforced concrete construction.

2.2 Refrigerator and ice plant

This is 5,333 m^2 in steel-framed reinforced concrete construction with platform. Refrigeration is saltwater circulation type with a 2,000-ton capacity. The capacity of crushed ice production is 100 tons a day.

2.3 Storage halls

For fresh fish: 3,970 m^2, steel-framed construction, one floor;
For salted and dried fish: 1,996 m^2, steel-framed reinforced concrete construction with platform, two floors, capacity 1,500 tons.

2.4 Other buildings

There is a room for boiling octopus: 244 m^2, steel construction, one floor.

There are basins for freshwater fish.

2.5 Discharging facilities

There are 550 meters of quays and piers for berthing and landing

of fish, which may accommodate vessels from 100 to 3,000 tons. In addition, there are 2 berths for 500-ton class vessels.

2.6 Internal transport equipment

Fork-lift trucks and hand carts are provided.

A private railway siding extends 2,710 m from the nearest freight station of the National Railways. This siding can accommodate 40 ten-ton railway cars.

2.7 Fresh water and power supply

Water is supplied by the Municipality Water Supply and also by well. Two cleaning cars are provided to clean the market.

Electricity is provided by special high tension transformer and transformer substations.

2.8 Amenities

There is a clinic with divisions for internal treatment, surgery, dentistry and other medical specialities.

There is one lodging house (462 m^2) with baths and beds for drivers and fishermen.

III. SALES ARRANGEMENTS AND SALES ORGANIZATION

1. Conditions on consigned sale

The fish, consigned by boat-owners or shippers (consigners) is in principle sold only by a consignee. A contract between a consigner and a consignee is made in conformity with the provisions of "Conditions on Consigned Sale" approved by the Market Authority. However, under the National Law, Central Wholesale Market Law, "Conditions on Consigned Sale" shall conform to the following:

(1) A consigner must deliver his consignment goods to a consignee at a consignees's selling area.

(2) Whenever a consignee receives consignment goods, he must at once inform the consigner of the kind, quality, grade, quantity of consignment goods, and their condition at the time of receipt and the date of arrival. Whenever the consignee finds any difference in quality from the invoice, loss or shortage, he is to submit goods to inspection by an inspector appointed by the Market Authority and then the consignee must inform the consigner of the result of inspection with an inspector's certificate. Without the above procedure, the consignee has no right to complain to the consigner of quality, loss or shortage of consignment goods.

(3) The selling price of consignment goods is subject to auction, except in the case where a consigner specifies a special condition, such as a minimum price.

(4) When it is impossible to sell consignment goods above the minimum price designated by the consigner or in accordance with his special condition, the consignee must inform the consigner to that effect and ask for the consigner's instructions.

In this case, when he considers that if he awaits instructions from a consigner it will give a substantial loss to the consigner, he may either keep the consignment goods in a refrigerator or by other suitable methods, or may, withthe approval of the Market Authority, sell them without following the consigner's instructions. In this case, the consignee need not bear any responsibility regarding loss.

(5) Without an agreement or a request by the consigner, a consignee shall not reconsign the consignment goods to another consignee for selling.

(6) A consigner must bear the following expenses concerning the consignment goods:

Communication expenses: special ones such as telegram fees, or long distance telephone charges.
Expenses for transporting: expenses for transport to a consignee's selling area and the expenses for loading and unloading.
Remittance charge.
Custody fee: the expenses incurred to keep consignment goods in a refrigerator or by other methods.
Adjustment fee: the expenses for additional ice, for containers, for rearrangement of fish, etc.
Any other expenses paid by a consignee on behalf of a consigner.

(7) When an auction sale has been made, a consignee must send an invoice which includes the kind, quantity and unit price of the goods, commission fee and itemized expenditure to be deducted, the total proceeds, and amount of remittance, to a consigner by the end of the following day.

(8) After a buyer buys consignment goods from a consignee, the buyer can ask the consignee for a reduction in price only in the case where the buyer discovers a previously unobserved flaw or a substantial difference in quantity or quality of the goods purchased. In this case, a consignee may make a reasonable reduction only when an inspector designated by the Market Authority sees good reason for reduction after inspecting the goods. In such a case the consignee must inform the consigner of this reduction, attaching an inspector's certificate.

(9) A consignee has no obligation to sell goods which may be unfit for human consumption. In case such goods are consigned for sale, a consignee can dispose of them under the direction of the Market Authority. A consigner must compensate for damages and expenses caused by the above treatment.

2. Organization of Sales

A consignee displays the fish, putting numbers on each lot, at the consignee's selling place, separating fish by species, sorts and quality. Wholesalers inspect the fish displayed on the selling place from 0400 hours and they make notes as to the quantity and quality landed. Sometime between 0500 to 0630 hours a market official rings a bell. At this signal the "Seri nin" or auctioneer (who is an employee of the consignee's company and is licensed by the Market Authority) stands on the platform for auction, and wholesalers and other auction participants gather around him. Thus the auction begins.

The auction takes place in order of arrival of goods at the market. In the case of consigner designating a minimum price, the auctioneer must announce it. The auction is an ascending one and prices are fixed at the maximum offer. In this case, the auctioneer, in a loud voice, announces the maximum price offered three times and when there is no higher price offered, goods are knocked down to the highest bidder. The wholesaler who has bought the fish then moves it to his stall in the market, where retailers come to buy the fish on a negotiation basis.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

The market is operated under the direct supervision of the Director of the Tokyo Central Wholesale Market, Tokyo Metropolitan Government. Market facilities, except some, such as ice plants or cold storage rooms owned by private firms, are owned by the Municipal Government and the Director is responsible for the maintenance and management of these facilities. The Minister of Agriculture and Forestry is secondarily responsible for supervision of the Market operations.

Quality Control is exercised by the Market from the viewpoint of public health. Supervision was strengthened when tuna tainted with the radioactive fallout were landed here in 1954. An inspection station was established as one of the permanent organs of the Bureau of Public Health, Tokyo Metropolitan Government. Since then the market has been under the strict supervision of this station, equipped with many modern sanitary instruments.

2. Finance

The market is operated under a special account, being separated from the general account of the Metropolitan Government in order to make the revenue and expenditure of the market clear. The market is operated in principle as a self-supporting organization, but in the light of the expenditures incurred by the

expansion of the market facilities and premises to meet the ever-increasing shipment, it has been necessary to transfer funds from the general accounts (accruing from taxes) of the Metropolitan Government.

Revenue and expenditure of the Tsukiji Wholesale Fish Market is shown below (for 1960):

Expenditure	(in yen)
Personnel expenses	99 935 767
Management expenses	273 840 406
Supervision expenses	11 828 915
Facilities Maintenance expenses	324 143 500
Total	709 748 588

Revenue	(in yen)
Rent	227 509 321
Miscellaneous fees	165 179 667
Disbursed money from the treasury	97 000
Issue of bonds	198 500 000
Transfer from the general account	118 462 600
Total	709 748 588

3. Personnel and Duties

The Market Authority manages the facilities in the compounds, buildings, electrical equipment, water supply and drainage, railway sidings, piers, one ice-making and one cold storage plant, and supervises the daily market transaction. Personnel number about 261. (Breakdown: 220 in administration; 41 field workers).

4. Common Administrative Services

The Market Authority prepares statistics on the amount received and sold on the basis of the figures which are reported each day by every consignee. Monthly and annual reports are published.

The Market Authority announces through newspapers, radio and television, the daily quantity received, species of fish and prices.

5. Agreements with Users and Regulations

The Tokyo Central Wholesale Market is operated under the Tokyo Central Wholesale Market Operation Regulations enacted by the Tokyo Metropolitan Assembly based on the Central Wholesale Market Law, the basic national law regulating wholesale markets. There are no general agreements with users, and users of market facilities use these under individual contract with the Market Authority or under

its permission.

The control specified in the Tokyo Central Wholesale Market Operation Regulations is as follows:

Control on a consignee

A consignee may not buy on his account from a supplier without the approval of the Market Authority.

A consignee shall not engage in a similar business in the Tokyo Area outside the market premises.

A consignee may not sell by any other method than auction without the approval of the Market Authority.

A consignee shall not expend any money for encouragement and inducement for supplying goods, or for inducing a wholesaler to pay the prices, without the approval of the Market Authority.

Control on a wholesaler

A wholesaler may not undertake any consignment sale.

A wholesaler shall not buy outside the market.

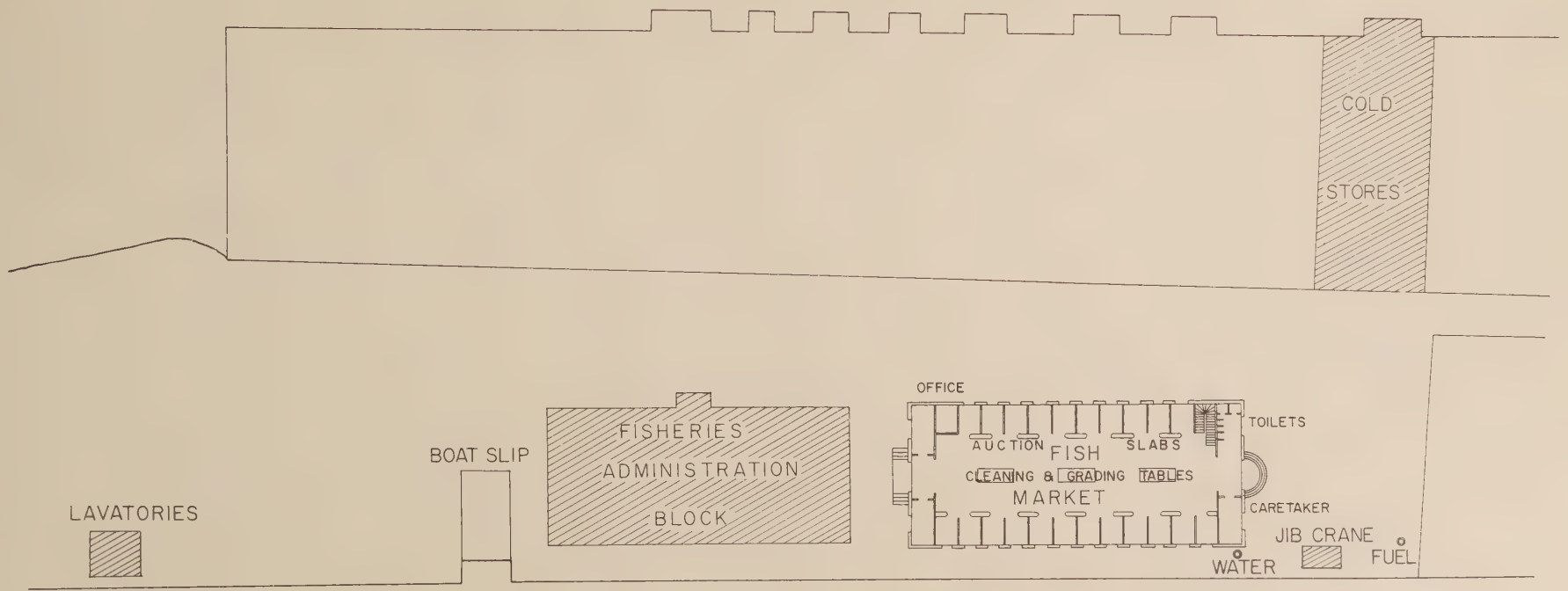
A wholesaler shall not sell outside the market.

6. Charges

The commission charged by a consignee is fixed at six percent of the proceeds. There are no fixed rates for wholesalers and retailers.

V A L L E T T A

Valletta Wholesale Fishmarket, on the island of Malta, has a relatively small turnover and is of local importance only. The organization of turnover and sales is of considerable interest, due to its strict centralization and regulation by the Director of Fisheries of the Department of Fisheries.



GRAND HARBOR

Fig. XX

FISH TERMINAL OF

VALLETTA

MALTA

VALLETTA - - - - - MALTA

I. GENERAL

1. Location

Valletta, Malta (population 330,000), is in the central Mediterranean, 60 miles south of the southeast tip of Sicily.

2. Type of Fishing Vessels Served

Motor trawlers, decked motorized fishing vessels and open boats.

3. Fishing Areas from which Fish is Landed

The fishing industry operates within a radius of 60 miles offshore.

4. Marketing Areas to which Fish is Shipped

The wholesale market serves the main urban district of Valletta and other towns.

5. Marketing Methods

Landings are sold by public auction.

6. Market Authorities and Users

6.1 Market authority

The market is administered by the Director of Fisheries.

6.2 Users

Shipowners (most fishing vessels are individually owned); importers;

retailers of fresh fish.

7. Statistics

7.1 Fishing fleet

Type	Size in feet	Number
Motor trawlers	50 to 80	10
Decked motor fishing vessels	45 to 70	8
Open fishing boats	25 to 40	192
Small fishing boats	12 to 18	194

7.2 Number of trips

Month	1960	1961
January	1 102	915
February	1 293	1 024
March	1 249	1 195
April	1 390	1 231
May	1 312	1 294
June	1 317	1 409
July	1 435	1 380
August	1 414	1 605
September	1 376	1 840
October	1 270	1 390
November	1 171	1 177
December	931	1 287
Annual total	15 258	15 747

7.3 Quantities and value of landings

Month	1960 kg	1960 £ Sterling 1/	1961 kg	1961 £ Sterling
January	43 248	12 115	61 659	15 649
February	53 958	16 136	74 001	18 939
March	69 513	18 942	77 316	20 058
April	73 134	21 287	92 820	23 245
May	113 152	25 412	104 572	22 951
June	151 424	31 069	142 896	25 995
July	138 424	25 335	140 720	24 650
August	122 980	23 065	189 592	41 447
September	142 376	41 934	187 564	53 444
October	183 836	47 076	170 820	43 465
November	121 576	32 133	92 600	25 250
December	57 720	14 678	64 376	16 696
Annual total	1 271 181	308 282	1 398 936	331 789

7.4 Disposition of landings

Practically all landings are sold as fresh fish.

7.5 Users

On an average, 800 retailers of fresh fish buy on the market, directly from the fishing industry, or from importers.

II. LAYOUT AND FACILITIES

1. Plan and Specifications

The Valletta fish market is on the waterfront on the northeast side of the Grand Harbour. Figure XX shows the market area and details of the main market building.

1/ £0.357 sterling = 1 US $

2. Facilities

2.1 Selling area and merchants' premises

The market building was erected in 1937 and is constructed of Malta stone. It occupies 700 m^2, consisting of a main central hall and 22 auction stalls rented to individual auctioneers (middlemen). Each stall includes a room of similar size in the upper floor which the middleman uses as private living quarters. Fish is generally sorted and cleaned before landing, but three slabs in the central ground floor area are also used for this purpose. Slabs at the entrance to each stall serve for display during auction.

2.2 Cold storage and ice plants

A privately-run cold storage plant is just across the road from the market. There are also two other cold storage and ice plants owned by private firms. These lie within one mile of the Valletta terminal. Crushed ice is transported to the market area.

2.3 Discharging facilities

The length of the quay alongside the fish market and the Fisheries Administration Block can berth several fishing boats. There is no tide and boats berth stern-to for landing their catches directly into the auction stalls through slits in each stall. Licensed fish carriers are employed but fishermen are allowed to carry their own catches into the market if they prefer. There is a jib-crane for landing heavy weights on the waterfront near the market.

2.4 Containers

Fish (except for large ones) are landed and auctioned in wooden boxes of 10 or 20 kg capacity.

Immediately after purchase, the boxes are removed by hand or on trolleys provided by the market administration.

2.5 Fresh water and power supply

Fresh water is available near the market. Sea water is used for cleaning the fish market and is also available on tap at several points inside the market for fish washing by retailers.

All stalls, rooms and central area are supplied with electricity from public works, and when required, telephone service.

2.6 Fuel

There is a fuel supply point operated by a private firm near the market.

2.7 Maintenance and repair service

In the harbor area there are several slipways capable of accommodating fishing vessels. Mechanical repair workshops are also available.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

On landing, fish is inspected by a fishery officer and in cases of doubt the port medical officer is also called in. Buyers may inspect all lots offered for sale.

Fish auction is carried out by auctioneers (middlemen) known as "pitkali" and licensed by the Director of Fisheries. All sales are made by public ascending auction direct to buyers in the retail trade. Fish is sold in small lots or by weight. Fishermen have the choice of auctioneer. Sales by auction start at 0330 hours from September to October and from May to August; 0400 hours during November, and 0500 hours from December to April. An audible signal indicates sale-starting time.

The Director of Fisheries provides a form of voucher on which the auctioneer records every individual sale. A copy of all such vouchers is consigned at the conclusion of every day's sale to the Director of Fisheries, who collects payment from retailers for purchases made at the market. The proceeds are paid to the fishermen or to the importers after deduction of $6\frac{1}{4}$ percent in both cases. Fishery officers and clerks are employed on this scheme and sales vouchers provide the basis for market intelligence, compilation of statistics, price variations, and the like.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

The administrative building of the Department of Fisheries is next to the fish market. The fish market was built by the Government and is administered by the Director of Fisheries. The Director licenses the auctioneers for local or imported fish. An auctioneer licensed to sell local fish may not sell imported fish. Imported fish has to be announced to the Director, is placed in a cold store, and its sale is not allowed until authorized by the Director.

The Director also licenses the retailers and fish hawkers. Even a fisherman selling his own catches by retail must not act without such a license. Retailers may not purchase fish whole except from a licensed auctioneer and shall

carry with them the purchase voucher to be controlled by Fishery Officers or members of the police, in respect of any fish they are offering for sale.

Any payment for fish purchased by retailers must be made only to the Director, who, on his part, pays the fishermen or importers and the auctioneer.

All fresh fish, including imported fish, is subject to inspection by Fishery Officers. Fish believed to be in poor condition may be seized and examined by the sanitary authorities.

2. Regulations

The Fish Marketing Regulations, 1957 govern auction and sale of fish on the Valletta fish market.

3. Charges

Auction commisssion:	for fishermen 1s. 3d. per £1.0.0	= 6¼ percent on the amount of registered sales
	for importer 2s. per £1.0.0	= 10 percent on the amount of registered sales
Remuneration of the auctioneer:	in both cases 1s. 3d. per £1.0.0	= 6¼ percent on the amount of registered sales
Fee for an auctioneer license:	10s. for every £10 (= 5 percent)	annual rental value of the market premises used
Rent for premises:	determined by public tender	

VANCOUVER

Although important quantities of various species are landed, the Vancouver fish market is not a true central market. There is no central Market Authority. The National Harbours Board under the Canadian Department of Transport runs two fishing ports (Fishermen's Wharf at Campbell Avenue and False Creek Fishermen's Terminal) with all necessary installations, but other parts of the port of Vancouver are not maintained and operated by the National Harbours Board and users may choose other waterfront space and services.

Sales procedure changes according to species. Halibut, one of the most important species of the Market, is auctioned at the Vancouver Fish Exchange. Except for this installation (commonly called "Halibut Exchange"), there is no central buying area. Minimum prices are fixed for salmon intended for canning and for herring. These minimum prices are negotiated by contract every year. Salmon for the fresh fish market and other fish are freely sold to buyers at the highest obtainable price. Moreover, there are sales on a co-operative basis and transactions between fishermen's organizations and traders. Fishing companies control a significant number of the boats. Vancouver is thus a good example of a market where participants in the fish trade will employ the most suitable method of selling, according to species and utilization.

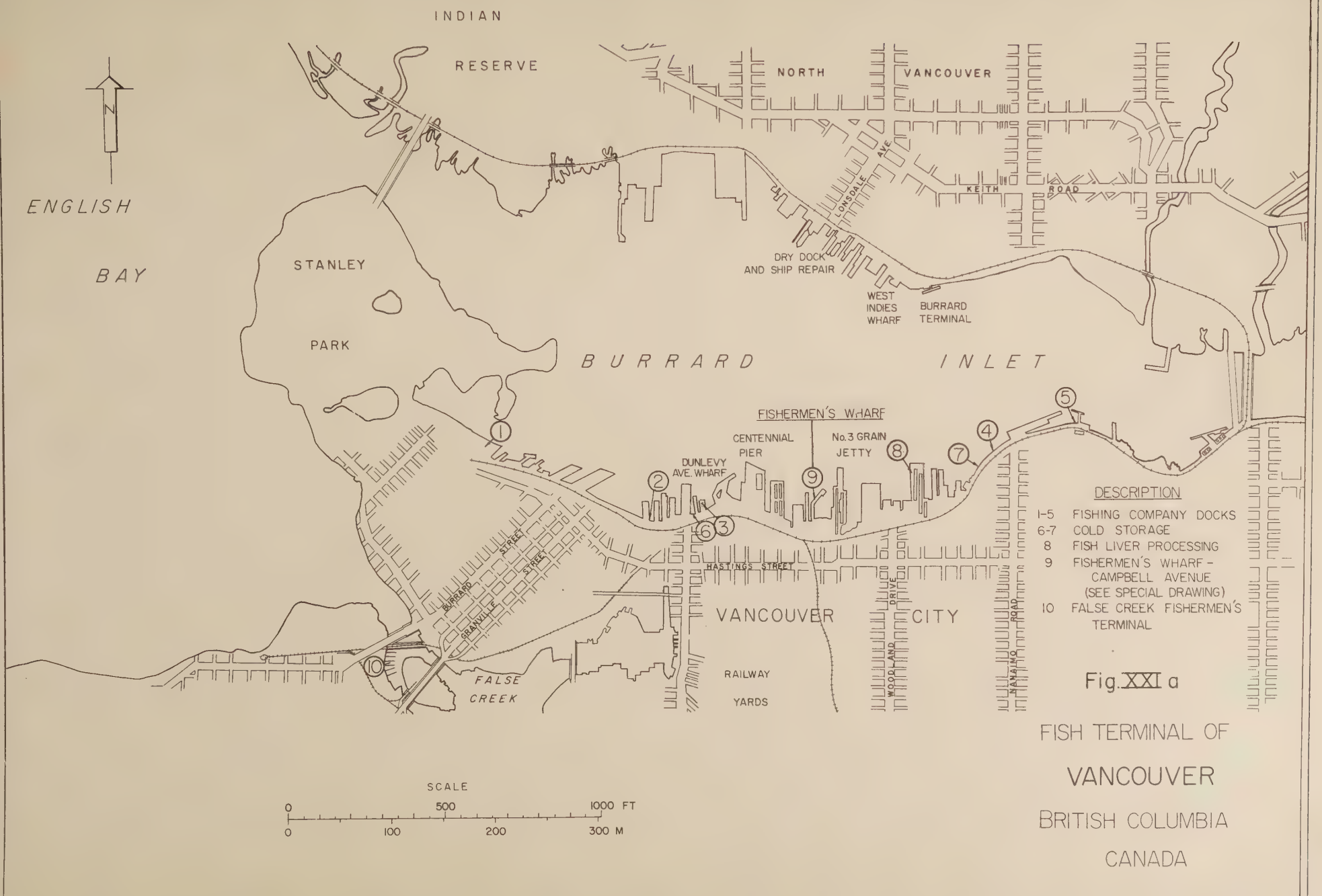


Fig. XXI a

FISH TERMINAL OF VANCOUVER

BRITISH COLUMBIA

CANADA

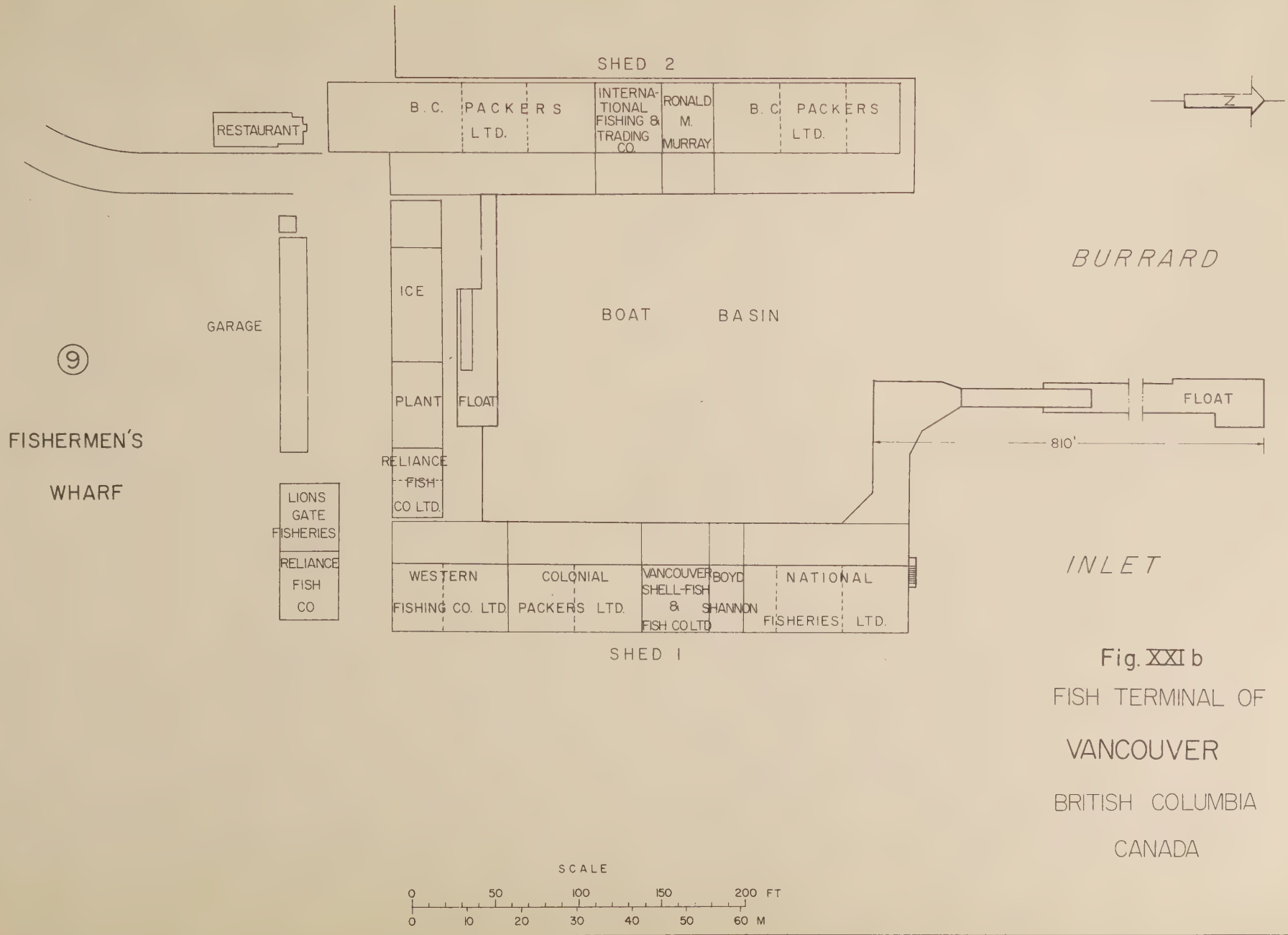


Fig. XXI b

FISH TERMINAL OF

VANCOUVER

BRITISH COLUMBIA

CANADA

VANCOUVER - - - - - CANADA

I. GENERAL

1. Location

The city of Vancouver (population: 377,000; 777,000 in metropolitan area, according to 1961 preliminary census), is between Burrard Inlet and the mouth of the Fraser River in the southwest corner of the mainland of Canada, in the Province of British Columbia.

2. Types of Fishing Vessels Served

Vancouver is the home port for trollers, gillnetters, seiners, longliners, draggers, shrimp and crab boats, packers and collectors. (Troll fishery is a kind of fishery with one or more fishing hooks on lines towed by a boat. Collectors are boats generally not equipped with ice and used for bringing salmon collected from fishing boats within a fairly restricted local fishing area to a local camp or canner. Packers are larger vessels equipped with ice that carry the fish from more distant fishing grounds to a central port. Vessels can be used for either purpose in various combinations of the functions. The distinction between collectors and packers is often quite arbitrary.)

3. Species of Fish

Salmon, halibut, herring, and other fish, and shellfish.

4. Fishing Areas from which Fish is Landed

Packers bring fish, primarily salmon, from all major fishing areas of the British Columbia coast. Trucks transport fish from the Fraser River and from the west coast of Vancouver Island via ferry to the mainland. Halibut are brought in by longliners from as close as 300 miles and as far as the Bering Sea (approximately 3,000 miles). Herring is landed primarily from the Strait of Georgia. Fishing areas near Vancouver include the Fraser River salmon fishery and the groundfish areas in the Strait of Georgia, Hecate Strait and the west coast of Vancouver Island.

Some tuna come from waters off the west coast of Vancouver Island, and also from offshore waters of the mainland to the south. Frozen tuna are imported from Japan for processing. Freshwater fish and Canadian east coast fish shipped to Vancouver are of minor importance.

5. Marketing Areas to which Fish is Shipped

Canned salmon and special salmon products are shipped to all world markets. Halibut are mostly shipped to the United States (two-thirds of production) and throughout Canada. Herring and herring products go to the United States, Europe and throughout Canada. Other fish and fish products go primarily to local markets, with special quantities to the United States and Europe.

6. Marketing Methods

This varies by species:

For net-caught salmon mainly intended for canning, a minimum price is established each year by negotiated contract.1/

Herring prices are negotiated in a similar manner.

Halibut prices for the fresh and frozen market are set by auction.

Market conditions determine the price of troll-caught salmon for the fresh and frozen fish market.

In the case of groundfish, most trawlers delivering to Vancouver are members of the Fishermen's Independent Co-operative. This group acts as a managing agent for the fishermen on fish prices and negotiates with the members of the Vancouver Fish Dealers' Association on an individual trip basis.

7. Market Authorities and Users

7.1 Market authority

There is no central market authority. The organization of marketing is determined mainly by species. Most of the dock area is used under lease from the National Harbours Board that is subject to the jurisdiction of the Canadian Department of Transport.

7.2 Users

Suppliers include: major integrated companies using trucks and packers to bring fish from the major fishing areas; direct landings by fishing

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1/ The negotiations are carried on between the Fisheries' Association, representing the fishing companies, and the United Fishermen's Allied Workers' Union, representing the independent fishing vessel owners, crew members, cannery workers and tendermen (crewmen employed on various auxiliary vessels, e.g. packers and collectors, "tending" the fishing boats), and the Native Brotherhood representing the Canadian Indian fishermen.

vessels owned or financed by major fishing companies; deliveries by individually-owned fishing vessels and by independent buyers or collectors; fishing vessels and packers owned and operated by co-operatives.

Buyers include: fresh fish dealers and integrated companies, including canneries, smoking houses, freezers, and mink-feed dealers; retail trade; brokers.

8. Statistics

8.1 Fishing fleet (classified on basis of major use in the fishery)

Type	Number	Typical Length (ft)
Dragger (Trawler)	33	55
Herring Gillnetter	6	32
Herring Seine	27	70
Longliner (Halibut)	68	55
Troller (offshore)	52	40
Troller (inside)	181	36
Seiner (Salmon) 1/	96	50 to 70
Salmon Gillnetter	184	34
Live Cod Boat	5	34
Shrimp and Crab	27	30 to 34
Collectors	59	36 to 38
Packers		70 to 80
Others	13	-
Total	751	

All these vessels operate on gasoline (petrol) or diesel fuel

1/ Approximately 60 percent of the 96 seiners are used only for salmon seining. The remaining 40 percent are generally larger vessels, and in addition to salmon seining, are used in a number of other fisheries, such as herring seining, halibut longlining and, to a lesser extent, as draggers.

8.2 Number of trips by month and by type of fishing vessel in 1960 1/ is shown as follows:

Type of vessel	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
Dragger (Trawler)	30	48	50	20	41	44	27	22	29	40	38	26	424
Herring Gill-netter	3	4	4	-	5	2	-	-	2	10	28	21	79
Herring Seiner	2	1	-	-	-	-	-	-	-	1	4	1	9
Longliner (Halibut)	-	2	10	22	49	54	40	8	3	15	10	2	245
Troller	-	1	1	8	19	46	85	93	171	54	74	68	620
Smelt Gill-netter	-	-	4	-	2	14	3	33	1	-	1	1	59
Smelt Seine	-	-	4	-	-	6	-	-	-	-	3	3	16
Live Cod Boat	-	-	-	-	-	7	3	2	2	3	11	-	28
Other	-	-	1	-	-	-	-	-	-	-	-	1	2
Monthly and Annual Total	35	56	74	59	116	173	158	158	238	123	169	123	1 482

8.3 Quantities and values of landings

1/ Only the number of trips intended for the fish market are shown. The number of trips which land salmon direct for canneries is not shown (including packers, collectors, gillnetters and salmon seiners). Salmon caught by gillnet and seine are normally used only for canning. A record low year for salmon occurred in 1960 and for this reason, there were fewer trips than would be expected in a normal year.

Many of the fishing vessels can be and are used in a number of different fisheries in accordance with market conditions and the economic impact of fishing regulations. In 1960 herring fishing activity was sharply curtailed and a few smaller herring seiners were engaged in local herring fishing, while larger vessels switched to salmon seining and other operations. This is reflected in the limited number of trips shown for herring seining in 1960. Although salmon gillnetters and trollers are the most numerous among the fishing domiciled in the Port of Vancouver, they do not make many direct landings at their home port, with the exception of landings for canneries.

8.3.1 Monthly quantities of landings of fish by fishing vessels according to use in 1960 are shown as follows (excluding salmon delivered direct to canners)

Human consumption	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
	1,000 lb landed weight												
Fresh and Frozen													
Salmon (Spring and Coho)	-	-	-	2	11	62	102	100	66	8	8	.11	370
Halibut	-	-	-	920	2542	1905	1985	136	936	97	13	-	8534
Fresh, Frozen and Other Use													
Other Fish	409	644	962	460	952	1359	809	732	960	854	776	274	9191
Shellfish	148	173	102	97	100	96	98	83	112	116	197	93	1415
Animal Food													
Minkfeed Reduction 1/	21	35	170	216	145	135	24	101	215	325	188	31	1586
Monthly and Annual Total	578	852	1234	1695	3750	3557	2998	1152	2289	1400	1182	409	21096 (9556 metric tons)

1/ Only one reducing firm reporting, with the quantity of herring reduced not typical due to depressed prices and limited operation in 1960.

8.3.2 Monthly quantities of landings of fish by packer and truck, according to use in 1960 are shown as follows (excluding salmon delivered direct to canners)

Human Consumption	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
	1,000 lb landed weight												
Fresh and Frozen													
Salmon (Spring and Coho)	4	13	30	106	453	1392	1394	1370	436	87	49	19	5 263
Halibut	-	-	-	-	362	382	61	3	4	1	-	-	813
Fresh, Frozen and Other Use													
Other Fish	8	61	557	466	401	236	93	99	125	172	289	31	2 538
Shellfish	29	-	-	-	-	1	-	-	-	13	24	53	120
Animal Food													
Minkfeed	-	6	-	-	-	1	-	-	-	2	-	-	9
Monthly and Annual Total	41	80	587	572	1 216	2012	1 458	1 472	565	275	362	103	8 743 (3 960 metric tons)

8.3.3 Monthly quantities of landings of salmon direct to canners by species in 1960 are as follows:

Month	Sockeye	Spring	Steelhead	Blueback	Coho	Pink	Chum	Total
	1,000 lb							
June	-	-	-	599	8	-	-	607
July	2 012	38	4	387	689	1 154	184	4 468
August	2 272	32	3	187	488	952	360	4 294
September	41	11	2	75	364	128	344	965
October	-	8	2	5	234	5	1 184	1 438
December	3	1	-	-	6	-	274	284
Total	4 328	90	11	1 253	1 789	2 239	2 346	12 956 (5 461 metric tons)

8.3.4 Total value of landings in 1960 1/

	Salmon	Halibut	Other Fish	Shellfish	Minkfeed	Total
	Canadian $ 1,000 2/					
By fishing vessel	186	1 488	661	313	48	2 696
By truck and packer	2 534	134	221	20	-	2 909
By direct delivery to canners 3/	3 121	-	-	-	-	2 121
Total	5 841	1 622	882	333	48	8 726

8.4 Users

General: there has been a continuous trend to centralization and integration of fishing operations and, accordingly, the Port of the City of Vancouver serves the fishing industry as:

> headquarters of the province's major fishing companies, Fishermen's Union and other associations and organizations connected with the industry; a place for fish handling and processing operations ranging from small and special operations to the activity of large integrated fishing companies; centers for contract price negotiations on salmon, for the auction (second largest halibut auction in British Columbia) and the main center for buying and selling operations for all fish and fish products.

Vessel owners: fishing companies own or directly control 40 percent of the vessels. The "Fisheries Association of B.C." represents most of the major fishing companies. The rest of the fishing vessels are owned by independent owners. Nearly all of them are organized and represented by one or more of the following organizations:

> United Fishermen and Allied Workers' Union
> Native Brotherhood of British Columbia
> B.C. Deep Sea Fishermen's Union
> B.C. Gillnetters' Association
> Pacific Trollers' Association

1/ In addition, one plant handles and processes domestic and imported fish livers. Value of landings to this plant are not shown.

2/ $ 1.04 Canadian = about $ 1 US

3/ No breakdown is available of the direct landings at canneries, but undoubtedly a high percentage of these deliveries would be made by packers and collectors.

Fishing Vessel Owners' Association
Prince Rupert Fishermen's Co-operative Association
B.C. Independent Fishermen's Co-operative
B.C. Purse Seiners' Protective Association

Buyers: there are some 45 wholesale buyers and brokers on the Vancouver market, 13 of these being engaged only at the brokerage level. The other 32 are engaged in both wholesale and processing operations and 7 of them operate Vancouver canneries. In addition, there are about 29 retailers who buy directly from fishermen. The buyer's organization rests on a species as well as on a use basis, although the few larger integrated companies are active in all phases of buying, processing, and selling.

Fifteen firms are members of the Vancouver Fish Exchange (commonly called the "Halibut Exchange") and account for all purchase of halibut. Occasionally other species of fish are sold on this Exchange.

Wholesalers buying fish (salmon, halibut, cod, sole, etc) for the fresh fish market are organized in the "Vancouver Fresh Fish Wholesale Dealers' Association". They are engaged in bargaining only to a limited extent, with 12 members covering about 80 percent of the local Vancouver fresh fish requirements.

Retailers buying directly from fishermen operate independently.

The prevailing importance of a few larger companies is shown by their owning or directly controlling 40 percent of the fishing vessels, including packers. Only one firm runs a small herring reduction plant in Vancouver itself and, accordingly, accounts for the entire production. Seven firms do all the salmon canning. The dominant voice representing the buyers is the "Fisheries Association of British Columbia". Four firms (not members of the Association) handle about 80 percent of the shellfish, and three other firms handle about 90 percent of the minkfeed.

Classification of fishing companies by size - 1960:

Fish Processors and Fresh Fish Buyers. Grouping by Value of Sales in 1960	Number of Firms	Wholesale Value C$	Percentage of Total Sales %
Over C$ 1 000 000	3	11 270 477	68.4
C$ 400 000 to C$ 999 999	5	2 830 362	17.2
C$ 200 000 to C$ 399 000	5	1 531 456	9.3
C$ 100 000 to C$ 199 000	3	385 905	2.3
C$ 50 000 to C$ 99 000	4	271 062	1.6
Under C$ 50 000	12	193 698	1.2
Total	32	C$ 16 482 960	100.0

II. LAYOUT AND FACILITIES

1. Plan and Specifications

Figure XXIa shows the location and over-all layout of the National Harbours Board (NHB) Fishermen's Wharf at the foot of Campbell Avenue. Figure XXIb shows the layout of Fishermen s Wharf in detail.

2. Facilities

2.1 Principal buildings and construction

All of the waterfront dock and plant buildings are erected on creosoted log pilings, creosoted stringers and generally have concrete floors. Walls and roofs are of galvanized metal or various types of composition material on a structural framework of timber. The largest processing plant measures approximately 90 by 76 meters and is two-storied. With the exception of cold storage plants, the other processing plants are much smaller on the average

2.2 Selling area

The Vancouver Fish Exchange is established in a rented room on the second floor of the National Harbours Board's ice plant and local Administration building at the Campbell Avenue Fishermen's Wharf. The room measures approximately 6 by 12 meters and is furnished with chairs, a long table and three ruled blackboards on one wall. These are marked with bids for various grades of halibut, with name plates representing the fifteen companies that have seats on the Exchange and finance its activity. The building measures 9 by 56 meters and was completed in 1960.

2.3 Merchants' premises

With the exception of the Vancouver Fish Exchange, there is no central buying area. Processors primarily work from their plant premises, while other wholesalers and buyers are primarily concentrated, or come to the Campbell Avenue Wharf to carry out their buying arrangements with the independent suppliers.

2.4 Ice plants

There are five ice plants owned by private companies and one flake-ice plant run by the National Harbours Board at Campbell Avenue Wharf. It has six flaking machines, each of 100-ton capacity.

2.5 Cold storage space

Seven private wholesaling and processing firms have large cold storage facilities. In addition, the National Harbours Board runs a cold storage room which is divided and available on lease. It has a 10° F operating temperature and a capacity of 200 tons.

2.6 Landing equipment, containers and internal transport equipment

The National Harbours Board owns eight electric cranes for unloading fish. In addition, six private firms own another twelve cranes, three of which are hydraulic. The containers used in handling fish are those to best handle various fish and their volume. There are nine firms using a total of nineteen power fork-lifts, dollies, hoists and other equipment for lifting and moving containers. If additional mechanical equipment is required, it can readily be rented. Completely mechanized handling of fish by moving-belts in all phases of fish-handling is the rule in the larger plants but, in small enterprises, there is a tendency to improvise, particularly where varying types of products are processed by piece-work on an intermittent basis.

2.7 Other facilities

Fuel, oil, repair and other services to fishing vessels are available from many private firms in the port area. Fresh water and power are available at all fish dock locations.

Six firms (including two cold storage companies) are located on the rail-road which extends along the waterfront. Rail loading facilities are readily available on public loading areas and by using the rail services at the two cold storage plants. Asphalt or concrete roads extend over the entire waterfront.

2.8 Amenities

Beside rest rooms and dock-side cafés, no special facilities are available along the fish docks. Public conveyance is readily available along the dock area and all facilities can easily be reached, being relatively close to the dock area. First-aid equipment is compulsory in all plants, but no special service is available to personnel of fishing vessels. Fire equipment and police protection are readily available.

2.9 False Creek Fishermen's Terminal

It is run by the National Harbours Board in False Creek and provides the following services and facilities to commercial fishermen:

Berthing at five floats, water, electricity, 24-hour police and fire protection, 74 net and gear storage rooms, showers and toilet facilities for men and women, an electric fork-lift and dollies for moving and handling gear, a concrete float for net repair and an electric crane for handling gear, parking space for cars, and a storage area for powered skiffs and dinghies. A restaurant concession is assigned for this area.

These services are available to commercial fishermen throughout the year. During the fishing season unused space is hired out to pleasure craft.

III. LANDING ARRANGEMENTS AND SALES ORGANIZATION

1. Landing and Display

There are no special arrangements for landing or displaying the catches, as company boats, previous negotiations, or price contracts account for such a high percentage of the eventual disposition of all fish landings. Fish for the fresh fish market may be inspected by buyers in the boat.

2. Organization of Sales

Halibut boat skippers use radio telephone to "hail", or announce, their catch prior to arrival in the port. This "hailed" weight is the estimated weight of their catches by size and grade and serves as a basis for bidding in the Halibut Exchange. "Hailed" weights have proven generally reliable and serviceable for this purpose, although there are Exchange rules relative to problems that could arise from this practice. Settlement is made on the basis of actual weights and grades, less allowance.

The Exchange opens at 0730 hours five days a week during the halibut season, and may meet at 1600 hours on Fridays to permit sale of halibut which would otherwise remain in boats for the weekend. Sales are made to the highest bidder. If prices on the Exchange do not appear attractive, fishermen may remove the load from the auction board and take the chance of obtaining a higher price from buyers not on the Exchange or from buyers in nearby United States ports.

Salmon sold for canning are sold at the negotiated minimum price to the fishermen where fish are delivered to the company collector and, accordingly, deliveries are not made on a price basis, unless a canning firm is willing to pay more than the minimum price. Demand and supply at the time of delivery fix the price in the fresh salmon market, with trollers generally selling to buyers paying the highest price.

Market demand and supply are also the main factor with other fish. Where grade and size are decisive for market and price, sorting and weighing is not done in order to establish a basis for sale. It is largely carried out after purchase in order to establish a basis for payment. The "Vancouver Fresh Fish Wholesale Dealers' Association" does some bargaining with the B.C. Independent Fishermen's Co-operative, consisting of draggers who supply about 90 percent of the other fresh fish requirements, without salmon and halibut.

As to the members of the Prince Rupert Fishermen's Co-operative Association, their buying, processing and sales organization is run as a service function, with all net proceeds credited back to members.

IV. ADMINISTRATION AND ORGANIZATION

1. Direction

1.1 Owner of the port

Most of the fish docks and facilities are leased from the National Harbours Board. This authority provides planning or approves of plans of all new buildings, docks and improvements that either the Board or the leasing concerns may require. In addition to this, the National Harbours Board runs the Fishermen's Wharf at Campbell Avenue where they rent cranes, an ice plant, cold storage and mooring facilities to buyers and suppliers. They also run the Fishermen's Terminal in False Creek.

1.2 Fisheries protection and quality control

The Department of Fisheries, Canada, enforces all protective legislation regarding tidal fisheries and for this purpose maintains an office at the Fishermen's Wharf. The Department also enforces health and sanitation regulations and maintains an inspection service for that purpose. In some sectors there is an additional inspection carried out by the City of Vancouver.

2. Finance

The National Harbours Board is under the Canadian Department of Transport and accordingly all financing, including maintaining and repairing the various market facilities, both capital and current, pertaining to their property, is done by the Government through the Board. Exceptions can occur in joint enterprises or special undertaking on specific projects with private companies, individuals or groups.

3. Personnel and Duties

The National Harbours Board's main office is on the waterfront, but its specific fishing industry administration at the Fishermen's Wharf is carried out from the ice plant building where seven men are employed; five in the ice plant and two in the office. Two men are employed at the False Creek Fishermen's Terminal. The Department of Fisheries has two Fisheries Inspectors of its Protection Service at Campbell Avenue. Three Inspection Officers are also assigned to the Port of Vancouver. The rest of the personnel is privately employed.

4. Common Administrative Services

4.1 Statistics

The Department of Fisheries, Canada, requires duplicate sales or delivery slips recording each fish buying transaction by a commercial buyer. The sales slips are registered by the Department and are then summarized and published monthly ("British Columbia Catch Statistics") to show the entire catch of fish by areas as landed on the British Columbia coast. This is, however, done primarily to supply adequate data for the conservation and development of the fisheries, but in doing so, it also supplies general information on total supply and source of fish landings.

4.2 Market intelligence

The only central administrative market intelligence reports are issued by the Department of Fisheries and include:

Weekly Market Report - this deals with deliveries and selling prices by species of total landings of all fish in the main markets of the province.

Herring Bulletin - issued weekly during the season; detailing fishing area, catches and their disposition.

British Columbia Canned Salmon Pack Bulletin - issued weekly and giving a cumulative comparison of salmon packed by species for the current period and the corresponding period of the previous five years.

Other reports, such as the Monthly B.C. Catch Statistics, and other annual reports summarizing all catches and dispositions by quantity and price.

5. Agreements with Users

The National Harbours Board acts in the capacity of a landlord and all users pay for space, use of services and other facilities on a standard basis. Users have the choice to obtain other waterfront space and services at their own discretion.

6. Charges

National Harbours Board rates at Campbell Avenue are:

Annual harbor dues (1961 rates)

registered under 10 tons - $ 2.00 per year
registered 11 to 25 tons - $ 5.00 per year
registered 25 tons and over - $ 10.00 per year

Berthage rate:

Daily - 1½ cents per foot (of the over-all length of the boat)
Monthly - under 40 feet - 25 cents per foot
- over 40 feet - 35 cents per foot.

Wharfage:

Wharfage charges are 60 cents per ton for fish (unloaded or loaded). This includes the use of cranes as available.

Ice

Ice charges are $7.50 per ton.

Cold storage

Cold storage charges are 37 cents per square foot.

The rates of the False Creek Fishermen's Terminal are:

Berthage:

Daily - 1½ cents per foot (of the over-all length of the boat)
Monthly - 35 cents per foot
Annually - $3.75 per foot.

Net and storage rooms:

Charges are $20.00 per month for 450 square feet or
$10.00 per month for 150 square feet.

There are charges for electricity and for the use of a concrete dock for repairing nets.

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